Model Name: GA-B150M-EVO

rev 1.0

SHEET	TITLE
01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1151-A
05	CPU_LGA1151-B-DDR4
06	CPU_LGA1151-C
07	CPU_LGA1150-D
08	DDR3 CHANNEL A
09	DDR3 CHANNEL B
10	PCH_CLK BUFFER
11	PCH_DMI,USB,PCIE
12	PCH_MISC
13	PCH SATA,PCIE,SATA_EXPRESS
14	PCH_PWR,GND
15	Dual BIOS
16	ITE 8628 LPC IO
17	HWM
18	FAN CTRL--SIO
19	PCI EXPRESS*16 SLOT
20	PCI EXPRESS*1 SLOT
21	M.2X4
22	SATA EXPRESS
23	IT8892 PCI BRIDGE
24	PCI SLOT
25	ISL95858_856 PWM
26	ISL95858_856 MOS_VCORE
27	ISL95858_856 MOS_VCCGT

SHEET	TITLE
28	
29	VCCSA_VCCIO_VCCPLL
30	RT8120_DDR_VDDQ
31	
32	RT8120_PCH_VCC1_0_PCH
33	DISCRETE POWER
34	NCT3933
35	ATX POWER , A_-PROCHOT
36	KB_MS_USB
37	DVI CONN
38	RTD2168 - DP to VGA - IC
39	RTD2168 - DP to VGA - Conn
40	
41	R_USB30
42	REALTEK - RTL8111G
43	USB30_LAN CONNECTOR-RTL8111G
44	Realtek ALC887
45	REAR AUDIO JACK
46	F_USB30
47	F_USB
48	COM , LPT , TPM
49	F_PANEL
50	TABLE LIST
51	POWER MAP

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Title: Cover Sheet

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Model Name: GA-B150M-EVO

rev1.0

Component value change history

Data	Change Item	Reason
2016/05/17	由9M15MSESI-00-10A修改. 1. 修改PCH_HS料號	First Release BOM 10A
2016/06/08	VR17.VR18改1K/4/1	10B

Circuit or PCB layout change

DATE	Change Item	Reason
2016/05/16	由B150M-SE-SI修改文字面	10B

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Title: BOM & PCB MODIFY HISTORY

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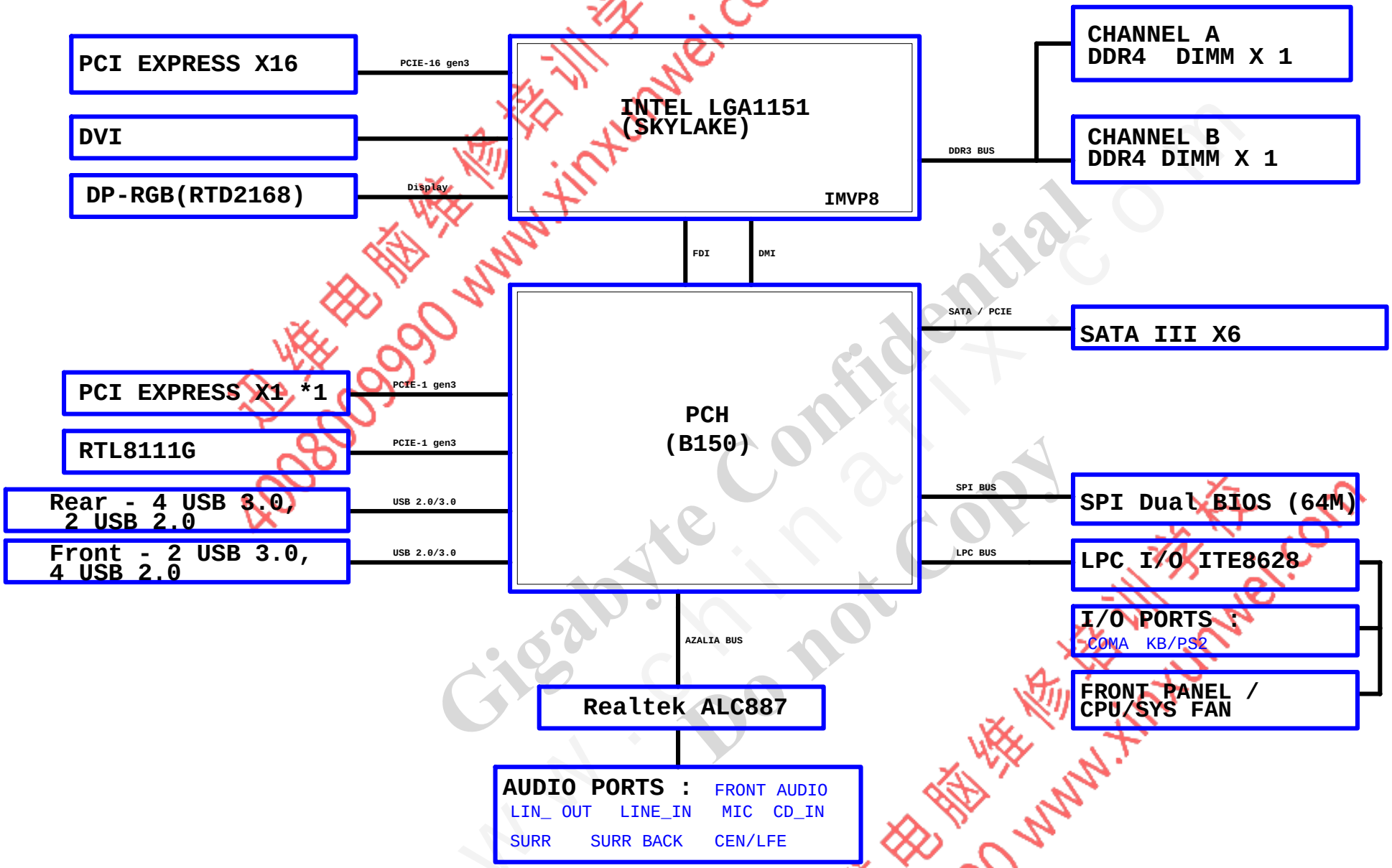
BLOCK DIAGRAM



Gigabyte Technology		
Title: BLOCK DIAGRAM		
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* Rev0.2B

LGA1151E SKT_H4

LGA1151

10 N_CPUCLK N_CPUCLK W5
10 N_-CPUCLK N_-CPUCLK W4
* 10 N_CPUPCIBCLK N_CPUPCIBCLK W1
10 N_-CPUPCIBCLK N_-CPUPCIBCLK W2
10 N_24MCLK N_24MCLK K9
10 N_-24MCLK N_-24MCLK J9

BCLKP BCLKN PCI_BCLKP PCI_BCLKN CLK24P CLK24N

* WR7 , WR1 , WR81
改 short pad

23 -PVIDALRT WR5 220/4/1 A_-PVIDALRT_R E39
23 PVIDSLCK WR7 0/4/SHT/M/X A_PVIDSLCK_R E38
23 PVIDSOUT WR1 0/4/SHT/M/X A_PVIDSOUT_R E40
16,31 A_-PROCHOT WR81 0/4/SHT/M/X A_-PHOT C39

VIDALERT# VIDSCK VIDSOUT PROCHOT#

27 DDR_VTT_CTL AC36 AC38 AC37
DDR_VTT_CNTL ZVM# RSVD_AC37

CPU_VCCST_PWOK U2
VCCST_PWRGD

12,16,47 N_CPUPWROK F8
13 N_-CPURST N_-CPURST E7
13 A_PMSYNC N_PMSYNC WR82 33/4 A_PMDOWN_R D8
16 A_PECI G7
* 16 A_-THRMTRIP A_-THRMTRIP D11
10 A_-SKTOCC AB35 AB36
WTP1
D13

PROCPWRGD RESET# PM_SYNC PM_DOWN PECI THERMTRIP# SKTOCC# PROC_SELECT# CATERR#

* 刪 net

CFG[0] H15
CFG[1] E15
CFG[2] E16
CFG[3] H16
CFG[4] F19 SKL_CFG4 WR47 1K/4/1/X
CFG[5] H18
CFG[6] G21
CFG[7] H20 SKL_CFG7 WR46 1K/4/1/X
CFG[8] G16
CFG[9] E16
CFG[10] C17
CFG[11] N17
CFG[12] G20
CFG[13] E20
CFG[14] C21
CFG[15] H19
CFG[17] E14
CFG[16] E14
CFG[19] E18
CFG[18] G18

CFG[0] CFG[1] CFG[2] CFG[3] CFG[4] CFG[5] CFG[6] CFG[7] CFG[8] CFG[9] CFG[10] CFG[11] CFG[12] CFG[13] CFG[14] CFG[15] CFG[17] CFG[16] CFG[19] CFG[18]

BPM#[0] D16
BPM#[1] D17
BPM#[2] G14
BPM#[3] H14

* 刪 net

PROC_TDO H13 A_TDO A_TDO 12
PROC_TDI G12 A_TDI A_TDI 12
PROC_TMS F13 A_TMS A_TMS 12
PROC_TCK F11 A_TCK A_TCK 12
PROC_TRST# F12 A_-TRST A_-TRST 13
PROC_PREQ# B9 A_-HPREQ
PROC_PRDY# B10

* 刪 net

CFG_RCOMP M11 CFG_RCOMP WR84 49.9/4/1

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CPU-SK/1151/S/GF

* 刪 net

LGA1151D SKT_H4

LGA1151

DDI1_TXP[0] C21
DDI1_TXN[0] D21
DDI1_TXP[1] D22
DDI1_TXN[1] E22
DDI1_TXP[2] B23
DDI1_TXN[2] A23
DDI1_TXP[3] C23
DDI1_TXN[3] D23
DDI1_AUXP B13
DDI1_AUXN C13

EDP_TXP[0] E10
EDP_TXN[0] D10
EDP_TXP[1] D9
EDP_TXN[1] C9
EDP_TXP[2] H10
EDP_TXN[2] G10
EDP_TXP[3] G9
EDP_TXN[3] E9
EDP_AUXP D12
EDP_AUXN E12

EDP_DISP_UTIL D14

EDP_RCOMP M9 EDP_RCOMP WR23 24.9/4/1 VCCIO

DVI

33 DVI_TX2 DDI2_TXP[0] B18
33 DVI_TX2- DDI2_TXN[0] A18
33 DVI_TX1 DDI2_TXP[1] D18
33 DVI_TX1- DDI2_TXN[1] E18
33 DVI_TX0 DDI2_TXP[2] C19
33 DVI_TX0- DDI2_TXN[2] D19
33 DVI_TXC DDI2_TXP[3] D20
33 DVI_TXC- DDI2_TXN[3] E20
DDI2_AUXP A12
DDI2_AUXN B12

DP-VGA

34 VGA_TXP0 DDI3_TXP[0] B14
34 VGA_TXN0 DDI3_TXN[0] A14
34 VGA_TXP1 DDI3_TXP[1] C15
34 VGA_TXN1 DDI3_TXN[1] B15
DDI3_TXP[2] B16
DDI3_TXN[2] A16
DDI3_TXP[3] C17
DDI3_TXN[3] B17
34 VGA_AUX DDI3_AUXP B11
34 VGA_AUX- DDI3_AUXN C11

PROC_AUDIO_CLK V3 N_AZCPU_SCLK 12
PROC_AUDIO_SDI V2 N_AZCPU_SDOUT 12
PROC_AUDIO_SDO U1 A_AZ_CPU_SDI_R WR85 33/4 A_AZ_CPU_SDI 12

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CPU-SK/1151/S/GF

G-15u : (CPU-SK/1151/S/15)
10SC1-F01151-11R / 10SC1-F01151-12R
G-FL : (CPU-SK/1151/S/GF)
10SC1-F01151-21R / 10SC1-F01151-22R

4 layer HDMI/DP/eDP/======4/4/4//15
6 layer HDMI/DP/eDP/======4/5.5/4//15

Impedance=85 +- 15%

檢查組態，不用可刪除

VCCST_VCCPLL WR2 100/4/1 PVIDSOUT
WR4 56.2/4/1 -PVIDALRT
VCCST_VCCPLL WR30 51/4/1 A_-HPREQ

* 刪 WR17 , WR14 , WR10 , WR29 , WR25 , WR56 , WR55
Note.53
VCCST_VCCPLL WR25 1K/4/1 A_-PHOT
WR70 1K/4/1 A_-THRMTRIP

* 刪 WR91

CPU_VCCST_PWOK
12,16 N_PCH_VRMPWRGD WR34 6.04K/4/1 WR3 2.8K/4/1

* 刪 net N_CPU_VCCST_PWOK

A_TCK WR11 51/4/1
A_-TRST WR9 51/4/1

N_CPUPWROK WBC47 1n/4/X7R/50V/K
13 N_-CPURST N_-CPURST WBC123 1n/4/X7R/50V/K

-CPURST

LGA1151C SKT_H4

LGA1151

PA_EXP_RXP0 B8 PEG_RXP[0] PEG_TXP[0] A5 PA_EXP_TXP0
PA_EXP_RXN0 B7 PEG_RXN[0] PEG_TXN[0] A6 PA_EXP_TXN0
PA_EXP_RXP1 C7 PEG_RXP[1] PEG_TXP[1] B4 PA_EXP_TXP1
PA_EXP_RXN1 C6 PEG_RXN[1] PEG_TXN[1] B5 PA_EXP_TXN1
PA_EXP_RXP2 D6 PEG_RXP[2] PEG_TXP[2] C3 PA_EXP_TXP2
PA_EXP_RXN2 D5 PEG_RXN[2] PEG_TXN[2] C4 PA_EXP_TXN2
PA_EXP_RXP3 E5 PEG_RXP[3] PEG_TXP[3] D2 PA_EXP_TXP3
PA_EXP_RXN3 E4 PEG_RXN[3] PEG_TXN[3] D3 PA_EXP_TXN3
PA_EXP_RXP4 F6 PEG_RXP[4] PEG_TXP[4] E1 PA_EXP_TXP4
PA_EXP_RXN4 F5 PEG_RXN[4] PEG_TXN[4] E2 PA_EXP_TXN4
PA_EXP_RXP5 G5 PEG_RXP[5] PEG_TXP[5] F2 PA_EXP_TXP5
PA_EXP_RXN5 G4 PEG_RXN[5] PEG_TXN[5] F3 PA_EXP_TXN5
PA_EXP_RXP6 H6 PEG_RXP[6] PEG_TXP[6] G1 PA_EXP_TXP6
PA_EXP_RXN6 H5 PEG_RXN[6] PEG_TXN[6] G2 PA_EXP_TXN6
PA_EXP_RXP7 J5 PEG_RXP[7] PEG_TXP[7] H2 PA_EXP_TXP7
PA_EXP_RXN7 J4 PEG_RXN[7] PEG_TXN[7] H3 PA_EXP_TXN7
PA_EXP_RXP8 K6 PEG_RXP[8] PEG_TXP[8] J1 PA_EXP_TXP8
PA_EXP_RXN8 K5 PEG_RXN[8] PEG_TXN[8] J2 PA_EXP_TXN8
PA_EXP_RXP9 L5 PEG_RXP[9] PEG_TXP[9] K2 PA_EXP_TXP9
PA_EXP_RXN9 L4 PEG_RXN[9] PEG_TXN[9] K3 PA_EXP_TXN9
PA_EXP_RXP10 M6 PEG_RXP[10] PEG_TXP[10] L1 PA_EXP_TXP10
PA_EXP_RXN10 M5 PEG_RXN[10] PEG_TXN[10] L2 PA_EXP_TXN10
PA_EXP_RXP11 N5 PEG_RXP[11] PEG_TXP[11] M2 PA_EXP_TXP11
PA_EXP_RXN11 N4 PEG_RXN[11] PEG_TXN[11] M3 PA_EXP_TXN11
PA_EXP_RXP12 P6 PEG_RXP[12] PEG_TXP[12] N1 PA_EXP_TXP12
PA_EXP_RXN12 P5 PEG_RXN[12] PEG_TXN[12] N2 PA_EXP_TXN12
PA_EXP_RXP13 R5 PEG_RXP[13] PEG_TXP[13] P2 PA_EXP_TXP13
PA_EXP_RXN13 R4 PEG_RXN[13] PEG_TXN[13] P3 PA_EXP_TXN13
PA_EXP_RXP14 T6 PEG_RXP[14] PEG_TXP[14] R2 PA_EXP_TXP14
PA_EXP_RXN14 T5 PEG_RXN[14] PEG_TXN[14] R1 PA_EXP_TXN14
PA_EXP_RXP15 U5 PEG_RXP[15] PEG_TXP[15] T2 PA_EXP_TXP15
PA_EXP_RXN15 U4 PEG_RXN[15] PEG_TXN[15] T3 PA_EXP_TXN15

VCCIO WR80 24.9/4/1 PEG_RCOMP L7 PEG_RCOMP

11 A_DMI_0RXP A_DMI_0RXP Y3 DMI_RXP[0] DMI_TXP[0] AC2 A_DMI_0TXP 11
11 A_DMI_0RXN A_DMI_0RXN Y4 DMI_RXN[0] DMI_TXN[0] AC1 A_DMI_0TXN 11
11 A_DMI_1RXP A_DMI_1RXP AA4 DMI_RXP[1] DMI_TXP[1] AD3 A_DMI_1TXP 11
11 A_DMI_1RXN A_DMI_1RXN AA5 DMI_RXN[1] DMI_TXN[1] AD2 A_DMI_1TXN 11
11 A_DMI_2RXP A_DMI_2RXP AB4 DMI_RXP[2] DMI_TXP[2] AF2 A_DMI_2TXP 11
11 A_DMI_2RXN A_DMI_2RXN AB3 DMI_RXN[2] DMI_TXN[2] AE1 A_DMI_2TXN 11
11 A_DMI_3RXP A_DMI_3RXP AC4 DMI_RXP[3] DMI_TXP[3] AF2 A_DMI_3TXP 11
11 A_DMI_3RXN A_DMI_3RXN AC5 DMI_RXN[3] DMI_TXN[3] AF3 A_DMI_3TXN 11

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CPU-SK/1151/S/GF

PA_EXP_TXP[0..15] PA_EXP_TXP[0..15] 19
PA_EXP_TXN[0..15] PA_EXP_TXN[0..15] 19
PA_EXP_RXP[0..15] PA_EXP_RXP[0..15] 19
PA_EXP_RXN[0..15] PA_EXP_RXN[0..15] 19

4 layer PEG/DMI======4/4/4//15
6 layer PEG/DMI======4/5.5/4//15

Impedance=85 +- 15%

W=12 mil out of CPU
S=15 mil out of CPU

CFG[2]:x16 Lane Numbering Reversal. 1= NORMAL;0=reversal
CFG[4]: eDP enable:1:disable/0=enable
CFG[6:5]:PCI Express* Bifurcation; 11= 1 x16 PCI Express;10=2x8 PCI Express
CFG[7]: PEG Training:1=(default) PEG Train immediately following RESET#;0=PEG Wait for BIOS

Bifurcation Config.	Signals Lanes CFG[6]	CFG[5]	CFG[2]
1x16	1	1	1
1x16 Reversed	1	1	0
2x8	1	0	1
2x8 Reversed	1	0	0
1x8+2x4	0	0	1
1x8+2x4 Reversed	0	0	0

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Title: CPU LGA1151-A

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* 改DDR4 net

LGA1151A

SKT_H4

LGA1151

MDA0 AE38
MDA1 AE37
MDA2 AG38
MDA3 AG37
MDA4 AE39
MDA5 AE40
MDA6 AG39
MDA7 AG40
MDA8 AJ38
MDA9 AJ37
MDA10 AL38
MDA11 AL37
MDA12 AJ40
MDA13 AJ39
MDA14 AL39
MDA15 AL40
MDA16 AN38
MDA17 AN40
MDA18 AR38
MDA19 AR37
MDA20 AN39
MDA21 AN37
MDA22 AR39
MDA23 AR40
MDA24 AW37
MDA25 AU38
MDA26 AV35
MDA27 AW35
MDA28 AU37
MDA29 AV37
MDA30 AT35
MDA31 AU35
MDA32 AY8
MDA33 AW8
MDA34 AV6
MDA35 AU6
MDA36 AU8
MDA37 AV8
MDA38 AW6
MDA39 AY6
MDA40 AY4
MDA41 AV4
MDA42 AT1
MDA43 AT2
MDA44 AV3
MDA45 AW4
MDA46 AT4
MDA47 AT3
MDA48 AP2
MDA49 AM4
MDA50 AP3
MDA51 AM3
MDA52 AP4
MDA53 AM2
MDA54 AP1
MDA55 AM1
MDA56 AK3
MDA57 AH1
MDA58 AK4
MDA59 AH2
MDA60 AH4
MDA61 AK2
MDA62 AH3
MDA63 AK1

DDR0_DQ[0]
DDR0_DQ[1]
DDR0_DQ[2]
DDR0_DQ[3]
DDR0_DQ[4]
DDR0_DQ[5]
DDR0_DQ[6]
DDR0_DQ[7]
DDR0_DQ[8]
DDR0_DQ[9]
DDR0_DQ[10]
DDR0_DQ[11]
DDR0_DQ[12]
DDR0_DQ[13]
DDR0_DQ[14]
DDR0_DQ[15]
DDR0_DQ[16]/DDR0_DQ[32]
DDR0_DQ[17]/DDR0_DQ[33]
DDR0_DQ[18]/DDR0_DQ[34]
DDR0_DQ[19]/DDR0_DQ[35]
DDR0_DQ[20]/DDR0_DQ[36]
DDR0_DQ[21]/DDR0_DQ[37]
DDR0_DQ[22]/DDR0_DQ[38]
DDR0_DQ[23]/DDR0_DQ[39]
DDR0_DQ[24]/DDR0_DQ[40]
DDR0_DQ[25]/DDR0_DQ[41]
DDR0_DQ[26]/DDR0_DQ[42]
DDR0_DQ[27]/DDR0_DQ[43]
DDR0_DQ[28]/DDR0_DQ[44]
DDR0_DQ[29]/DDR0_DQ[45]
DDR0_DQ[30]/DDR0_DQ[46]
DDR0_DQ[31]/DDR0_DQ[47]
DDR0_DQ[32]/DDR1_DQ[0]
DDR0_DQ[33]/DDR1_DQ[1]
DDR0_DQ[34]/DDR1_DQ[2]
DDR0_DQ[35]/DDR1_DQ[3]
DDR0_DQ[36]/DDR1_DQ[4]
DDR0_DQ[37]/DDR1_DQ[5]
DDR0_DQ[38]/DDR1_DQ[6]
DDR0_DQ[39]/DDR1_DQ[7]
DDR0_DQ[40]/DDR1_DQ[8]
DDR0_DQ[41]/DDR1_DQ[9]
DDR0_DQ[42]/DDR1_DQ[10]
DDR0_DQ[43]/DDR1_DQ[11]
DDR0_DQ[44]/DDR1_DQ[12]
DDR0_DQ[45]/DDR1_DQ[13]
DDR0_DQ[46]/DDR1_DQ[14]
DDR0_DQ[47]/DDR1_DQ[15]
DDR0_DQ[48]/DDR1_DQ[32]
DDR0_DQ[49]/DDR1_DQ[33]
DDR0_DQ[50]/DDR1_DQ[34]
DDR0_DQ[51]/DDR1_DQ[35]
DDR0_DQ[52]/DDR1_DQ[36]
DDR0_DQ[53]/DDR1_DQ[37]
DDR0_DQ[54]/DDR1_DQ[38]
DDR0_DQ[55]/DDR1_DQ[39]
DDR0_DQ[56]/DDR1_DQ[40]
DDR0_DQ[57]/DDR1_DQ[41]
DDR0_DQ[58]/DDR1_DQ[42]
DDR0_DQ[59]/DDR1_DQ[43]
DDR0_DQ[60]/DDR1_DQ[44]
DDR0_DQ[61]/DDR1_DQ[45]
DDR0_DQ[62]/DDR1_DQ[46]
DDR0_DQ[63]/DDR1_DQ[47]

AU33 DDR0_ECC[0]
AT33 DDR0_ECC[1]
AW33 DDR0_ECC[2]
AV33 DDR0_ECC[3]
AU33 DDR0_ECC[4]
AV33 DDR0_ECC[5]
AW33 DDR0_ECC[6]
AY33 DDR0_ECC[7]

DDR CHANNEL A

AW18 M_DCLKA0 / AV18 M_-DCLKA0 → M_DCLKA0 8, M_-DCLKA0 8
AW17 M_DCLKA1 / AV17 M_-DCLKA1 → M_DCLKA1 8, M_-DCLKA1 8
AW16
AV16
AT16
AU16

DDR0_CKP[0]
DDR0_CKN[0]
DDR0_CKP[1]
DDR0_CKN[1]
DDR0_CKP[2]
DDR0_CKN[2]
DDR0_CKP[3]
DDR0_CKN[3]

AY24 CKEA0 → CKEA0 8
AW24 CKEA1 → CKEA1 8
AV24
AV25

DDR0_CKE[0]
DDR0_CKE[1]
DDR0_CKE[2]
DDR0_CKE[3]

AW12 M_-CSA0 → M_-CSA0 8
AU11 M_-CSA1 → M_-CSA1 8
AV13
AV10

DDR0_CS#[0]
DDR0_CS#[1]
DDR0_CS#[2]
DDR0_CS#[3]

AW11 MODT_A0
AU14 MODT_A1
AU12
AY10

DDR0_ODT[0]
DDR0_ODT[1]
DDR0_ODT[2]
DDR0_ODT[3]

AY13 SBAA0 → SBAA0 8
AY15 SBAA1 → SBAA1 8
AW23 BG_A0 → BG_A0 8

DDR0_BA[0]/DDR0_CAB[4]/DDR0_BA[0]
DDR0_BA[1]/DDR0_CAB[6]/DDR0_BA[1]
DDR0_BA[2]/DDR0_CAA[5]/DDR0_BG[0]

AW13 MAAA16
AV14 MAAA14
AY11 MAAA15

DDR0_RAS#/DDR0_CAB[3]/DDR0_MA[16]
DDR0_WE#/DDR0_CAB[2]/DDR0_MA[14]
DDR0_CAS#/DDR0_CAB[1]/DDR0_MA[15]

AW15 MAAA0
AU18 MAAA1
AU17 MAAA2
AV19 MAAA3
AT19 MAAA4
AU20 MAAA5
AV20 MAAA6
AU21 MAAA7
AT20 MAAA8
AT22 MAAA9
AY14 MAAA10
AU22 MAAA11
AV22 MAAA12
AV12 MAAA13

DDR0_MA[0]/DDR0_CAB[9]/DDR0_MA[0]
DDR0_MA[1]/DDR0_CAB[8]/DDR0_MA[1]
DDR0_MA[2]/DDR0_CAB[5]/DDR0_MA[2]
DDR0_MA[3]
DDR0_MA[4]
DDR0_MA[5]/DDR0_CAA[0]/DDR0_MA[5]
DDR0_MA[6]/DDR0_CAA[2]/DDR0_MA[6]
DDR0_MA[7]/DDR0_CAA[4]/DDR0_MA[7]
DDR0_MA[8]/DDR0_CAA[3]/DDR0_MA[8]
DDR0_MA[9]/DDR0_CAA[1]/DDR0_MA[9]
DDR0_MA[10]/DDR0_CAB[7]/DDR0_MA[10]
DDR0_MA[11]/DDR0_CAA[7]/DDR0_MA[11]
DDR0_MA[12]/DDR0_CAA[6]/DDR0_MA[12]
DDR0_MA[13]/DDR0_CAB[0]/DDR0_MA[13]
DDR0_MA[14]/DDR0_CAA[9]/DDR0_BG[1]
DDR0_MA[15]/DDR0_CAA[8]/DDR0_ACT#

AV23 BG_A1 → BG_A1 8
AU24 → M_-ACT_A 8

AY15 → M_DDR_PARA 8
AT23 DDR0_ALERT# → M_-ALERT_A 8

DDR0_PAR

AF39 M_-DQSA0
AK39 M_-DQSA1
AP39 M_-DQSA2
AU36 M_-DQSA3
AW7 M_-DQSA4
AU3 M_-DQSA5
AN3 M_-DQSA6
AJ3 M_-DQSA7

DDR0_DQSN[0]
DDR0_DQSN[1]
DDR0_DQSN[2]/DDR0_DQSN[4]
DDR0_DQSN[3]/DDR0_DQSN[5]
DDR0_DQSN[4]/DDR1_DQSN[0]
DDR0_DQSN[5]/DDR1_DQSN[1]
DDR0_DQSN[6]/DDR1_DQSN[4]
DDR0_DQSN[7]/DDR1_DQSN[5]

AF38 M_DQSA0
AK38 M_DQSA1
AP38 M_DQSA2
AV36 M_DQSA3
AV7 M_DQSA4
AU2 M_DQSA5
AN2 M_DQSA6
AJ2 M_DQSA7

DDR0_DQSP[0]
DDR0_DQSP[1]
DDR0_DQSP[2]/DDR0_DQSP[4]
DDR0_DQSP[3]/DDR0_DQSP[5]
DDR0_DQSP[4]/DDR1_DQSP[0]
DDR0_DQSP[5]/DDR1_DQSP[1]
DDR0_DQSP[6]/DDR1_DQSP[4]
DDR0_DQSP[7]/DDR1_DQSP[5]

AV32
AU32

DDR0_DQSP[8]
DDR0_DQSN[8]

1 OF12

CPU-SK/1151/S/GF

LGA1151B

SKT_H4

LGA1151

MDB0 AD34
MDB1 AD35
MDB2 AG35
MDB3 AH35
MDB4 AE35
MDB5 AE34
MDB6 AG34
MDB7 AH34
MDB8 AK35
MDB9 AL35
MDB10 AK32
MDB11 AL32
MDB12 AK34
MDB13 AL34
MDB14 AK31
MDB15 AL31
MDB16 AP35
MDB17 AN35
MDB18 AN32
MDB19 AP32
MDB20 AN34
MDB21 AP34
MDB22 AN31
MDB23 AP31
MDB24 AL29
MDB25 AM29
MDB26 AP29
MDB27 AR29
MDB28 AM28
MDB29 AL28
MDB30 AR28
MDB31 AP28
MDB32 AR12
MDB33 AP12
MDB34 AM13
MDB35 AL13
MDB36 AR13
MDB37 AP13
MDB38 AM12
MDB39 AL12
MDB40 AP10
MDB41 AR10
MDB42 AR7
MDB43 AP7
MDB44 AR9
MDB45 AP9
MDB46 AR6
MDB47 AP6
MDB48 AM10
MDB49 AL10
MDB50 AM7
MDB51 AL7
MDB52 AM9
MDB53 AL9
MDB54 AM6
MDB55 AL6
MDB56 AJ6
MDB57 AJ7
MDB58 AE6
MDB59 AE7
MDB60 AH7
MDB61 AH6
MDB62 AE7
MDB63 AF6

DDR1_DQ[0]/DDR0_DQ[16]
DDR1_DQ[1]/DDR0_DQ[17]
DDR1_DQ[2]/DDR0_DQ[18]
DDR1_DQ[3]/DDR0_DQ[19]
DDR1_DQ[4]/DDR0_DQ[20]
DDR1_DQ[5]/DDR0_DQ[21]
DDR1_DQ[6]/DDR0_DQ[22]
DDR1_DQ[7]/DDR0_DQ[23]
DDR1_DQ[8]/DDR0_DQ[24]
DDR1_DQ[9]/DDR0_DQ[25]
DDR1_DQ[10]/DDR0_DQ[26]
DDR1_DQ[11]/DDR0_DQ[27]
DDR1_DQ[12]/DDR0_DQ[28]
DDR1_DQ[13]/DDR0_DQ[29]
DDR1_DQ[14]/DDR0_DQ[30]
DDR1_DQ[15]/DDR0_DQ[31]
DDR1_DQ[16]/DDR0_DQ[48]
DDR1_DQ[17]/DDR0_DQ[49]
DDR1_DQ[18]/DDR0_DQ[50]
DDR1_DQ[19]/DDR0_DQ[51]
DDR1_DQ[20]/DDR0_DQ[52]
DDR1_DQ[21]/DDR0_DQ[53]
DDR1_DQ[22]/DDR0_DQ[54]
DDR1_DQ[23]/DDR0_DQ[55]
DDR1_DQ[24]/DDR0_DQ[56]
DDR1_DQ[25]/DDR0_DQ[57]
DDR1_DQ[26]/DDR0_DQ[58]
DDR1_DQ[27]/DDR0_DQ[59]
DDR1_DQ[28]/DDR0_DQ[60]
DDR1_DQ[29]/DDR0_DQ[61]
DDR1_DQ[30]/DDR0_DQ[62]
DDR1_DQ[31]/DDR0_DQ[63]
DDR1_DQ[32]/DDR1_DQ[16]
DDR1_DQ[33]/DDR1_DQ[17]
DDR1_DQ[34]/DDR1_DQ[18]
DDR1_DQ[35]/DDR1_DQ[19]
DDR1_DQ[36]/DDR1_DQ[20]
DDR1_DQ[37]/DDR1_DQ[21]
DDR1_DQ[38]/DDR1_DQ[22]
DDR1_DQ[39]/DDR1_DQ[23]
DDR1_DQ[40]/DDR1_DQ[24]
DDR1_DQ[41]/DDR1_DQ[25]
DDR1_DQ[42]/DDR1_DQ[26]
DDR1_DQ[43]/DDR1_DQ[27]
DDR1_DQ[44]/DDR1_DQ[28]
DDR1_DQ[45]/DDR1_DQ[29]
DDR1_DQ[46]/DDR1_DQ[30]
DDR1_DQ[47]/DDR1_DQ[31]
DDR1_DQ[48]
DDR1_DQ[49]
DDR1_DQ[50]
DDR1_DQ[51]
DDR1_DQ[52]
DDR1_DQ[53]
DDR1_DQ[54]
DDR1_DQ[55]
DDR1_DQ[56]
DDR1_DQ[57]
DDR1_DQ[58]
DDR1_DQ[59]
DDR1_DQ[60]
DDR1_DQ[61]
DDR1_DQ[62]
DDR1_DQ[63]

AR25 DDR1_ECC[0]
AR26 DDR1_ECC[1]
AM26 DDR1_ECC[2]
AM25 DDR1_ECC[3]
AP26 DDR1_ECC[4]
AP25 DDR1_ECC[5]
AL25 DDR1_ECC[6]
AL26 DDR1_ECC[7]

DDR CHANNEL B

AM20 M_DCLKB0 → M_DCLKB0 9, M_-DCLKB0 9
AM21 M_-DCLKB0
AP22 M_DCLKB1 → M_DCLKB1 9, M_-DCLKB1 9
AP21 M_-DCLKB1
AN20
AN21
AP19
AP20

DDR1_CKP[0]
DDR1_CKN[0]
DDR1_CKP[1]
DDR1_CKN[1]
DDR1_CKP[2]
DDR1_CKN[2]
DDR1_CKP[3]
DDR1_CKN[3]

AY29 CKEB0 → CKEB0 9
AV29 CKEB1 → CKEB1 9
AW29
AU29

DDR1_CKE[0]
DDR1_CKE[1]
DDR1_CKE[2]
DDR1_CKE[3]

AP17 M_-CSB0 → M_-CSB0 9
AN15 M_-CSB1 → M_-CSB1 9
AN17
AM15

DDR1_CS#[0]
DDR1_CS#[1]
DDR1_CS#[2]
DDR1_CS#[3]

AM16 MODT_B0
AL16 MODT_B1
AP15
AL15

DDR1_ODT[0]
DDR1_ODT[1]
DDR1_ODT[2]
DDR1_ODT[3]

AN18 MAAB16
AL17 MAAB14
AP16 MAAB15

DDR1_RAS#/DDR1_CAB[3]/DDR1_MA[16]
DDR1_WE#/DDR1_CAB[2]/DDR1_MA[14]
DDR1_CAS#/DDR1_CAB[1]/DDR1_MA[15]

AL18 SBAB0 → SBAB0 9
AM18 SBAB1 → SBAB1 9
AW28 BG_B0 → BG_B0 9

DDR1_BA[0]/DDR1_CAB[4]/DDR1_BA[0]
DDR1_BA[1]/DDR1_CAB[6]/DDR1_BA[1]
DDR1_BA[2]/DDR1_CAA[5]/DDR1_BG[0]

AL19 MAAB0
AL22 MAAB1
AM22 MAAB2
AM23 MAAB3
AP23 MAAB4
AL23 MAAB5
AW26 MAAB6
AY26 MAAB7
AU26 MAAB8
AW27 MAAB9
AP18 MAAB10
AU27 MAAB11
AV27 MAAB12
AR15 MAAB13

DDR1_MA[0]/DDR1_CAB[9]/DDR1_MA[0]
DDR1_MA[1]/DDR1_CAB[8]/DDR1_MA[1]
DDR1_MA[2]/DDR1_CAB[5]/DDR1_MA[2]
DDR1_MA[3]
DDR1_MA[4]
DDR1_MA[5]/DDR1_CAA[0]/DDR1_MA[5]
DDR1_MA[6]/DDR1_CAA[2]/DDR1_MA[6]
DDR1_MA[7]/DDR1_CAA[4]/DDR1_MA[7]
DDR1_MA[8]/DDR1_CAA[3]/DDR1_MA[8]
DDR1_MA[9]/DDR1_CAA[1]/DDR1_MA[9]
DDR1_MA[10]/DDR1_CAB[7]/DDR1_MA[10]
DDR1_MA[11]/DDR1_CAA[7]/DDR1_MA[11]
DDR1_MA[12]/DDR1_CAA[6]/DDR1_MA[12]
DDR1_MA[13]/DDR1_CAB[0]/DDR1_MA[13]
DDR1_MA[14]/DDR1_CAA[9]/DDR1_BG[1]
DDR1_MA[15]/DDR1_CAA[8]/DDR1_ACT#

AY28 BG_B1 → BG_B1 9
AU28 → M_-ACT_B 9

AL20 → M_DDR_PARB 9
AY25 DDR1_ALERT# → M_-ALERT_B 9

DDR1_PAR

AF34 M_-DQSB0
AK33 M_-DQSB1
AN33 M_-DQSB2
AN29 M_-DQSB3
AN13 M_-DQSB4
AR8 M_-DQSB5
AM8 M_-DQSB6
AG6 M_-DQSB7

DDR1_DQSN[0]/DDR0_DQSN[2]
DDR1_DQSN[1]/DDR0_DQSN[3]
DDR1_DQSN[2]/DDR0_DQSN[6]
DDR1_DQSN[3]/DDR0_DQSN[7]
DDR1_DQSN[4]/DDR1_DQSN[2]
DDR1_DQSN[5]/DDR1_DQSN[3]
DDR1_DQSN[6]
DDR1_DQSN[7]

AF35 M_DQSB0
AL33 M_DQSB1
AP33 M_DQSB2
AN28 M_DQSB3
AN12 M_DQSB4
AP8 M_DQSB5
AL8 M_DQSB6
AG7 M_DQSB7

DDR1_DQSP[0]/DDR0_DQSP[2]
DDR1_DQSP[1]/DDR0_DQSP[3]
DDR1_DQSP[2]/DDR0_DQSP[6]
DDR1_DQSP[3]/DDR0_DQSP[7]
DDR1_DQSP[4]/DDR1_DQSP[2]
DDR1_DQSP[5]/DDR1_DQSP[3]
DDR1_DQSP[6]
DDR1_DQSP[7]

AN25
AN26

DDR1_DQSP[8]
DDR1_DQSN[8]

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AB40 VREF_CAB → VREF_CAB 8
AC40
AC39 VREF_DQB → VREF_DQB 9

DDR_VREF_CA
DDR0_VREF_DQ
DDR1_VREF_DQ

8 MODT_A[0..1] ↔ MODT_A[0..1]
9 MODT_B[0..1] ↔ MODT_B[0..1]
8 MDA[0..63] ↔ MDA[0..63]
9 MDB[0..63] ↔ MDB[0..63]
8 M_DQSA[0..7] ↔ M_DQSA[0..7]
8 M_-DQSA[0..7] ↔ M_-DQSA[0..7]
8 MAAA[0..16] ↔ MAAA[0..16]
9 MAAB[0..16] ↔ MAAB[0..16]
9 M_DQSB[0..7] ↔ M_DQSB[0..7]
9 M_-DQSB[0..7] ↔ M_-DQSB[0..7]

LGA1151
ILM_BP_CR/115X/NORMAL NI

BLACK NI

Need check the new CPU ME

Gigabyte Technology		
Title: CPU LGA1151-B		
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VCCSA

WBC56
10u/8/X5R/16V/K

* 刪 WBC124 , WBC125 , WBC126 , WBC127 電容

VCCIO

WBC69
10u/8/X5R/16V/K

* 刪 VCCGT 電容

* WR94 , WR59 , WR86 , WR60 , WR61 , WR62 , WR63 改 short pad

VCCST_VCCPLL
VCCSFUSEPRG

VCCSA
WR94 0/4/X
VCCST_VCCPLL

Note 67

VCCGT

LGA1151J SKT_H4
LGA1151

AA34	VCCGT	VCCGTX_F35	F35		
AA35	VCCGT	VCCGTX_G34	G34		
AA36	VCCGT	VCCGTX_G35	G35		
AA37	VCCGT	VCCGTX_H33	H33		
AA38	VCCGT	VCCGTX_H34	H34		
AB33	VCCGT	VCCGTX_J33	J33		
AB34	VCCGT	VCCGTX_J35	J35		
G36	VCCGT	VCCGTX_K32	K32		
G37	VCCGT	VCCGTX_K34	K34		
G38	VCCGT	VCCGTX_L31	L31		
G39	VCCGT	VCCGTX_L33	L33		
G40	VCCGT	VCCGTX_M32	M32		
H36	VCCGT				
H38	VCCGT				
H40	VCCGT				
J36	VCCGT				
J37	VCCGT				
J38	VCCGT				
J39	VCCGT				
J40	VCCGT				
K36	VCCGT				
K38	VCCGT				
K40	VCCGT				
L34	VCCGT				
L35	VCCGT				
L36	VCCGT				
L37	VCCGT				
L38	VCCGT				
L39	VCCGT				
L40	VCCGT				
M33	VCCGT				
M34	VCCGT				
M36	VCCGT				
M38	VCCGT				
M40	VCCGT				
N34	VCCGT				
N35	VCCGT				
N36	VCCGT				
N37	VCCGT				
N38	VCCGT				
N39	VCCGT				
N40	VCCGT				
P33	VCCGT				
P34	VCCGT				
P36	VCCGT				
P38	VCCGT				
P40	VCCGT				
R34	VCCGT				
R35	VCCGT				
R36	VCCGT				
R37	VCCGT				
R38	VCCGT				
R39	VCCGT				
R40	VCCGT				
T33	VCCGT				
T34	VCCGT				
T36	VCCGT				
T38	VCCGT				
T40	VCCGT				
U34	VCCGT				
U35	VCCGT				
U36	VCCGT				
U37	VCCGT				
U38	VCCGT				
U39	VCCGT				
U40	VCCGT				
V33	VCCGT				
V34	VCCGT				
V36	VCCGT				
V38	VCCGT				
V40	VCCGT				
W34	VCCGT				
W35	VCCGT	VCCGT_SENSE	F39	VCCGT_SENSE_23	
W36	VCCGT	VSSGT_SENSE	F38	VSSGT_SENSE_23	
W37	VCCGT				
W38	VCCGT	VCCGTX_SENSE	F37		
Y33	VCCGT	VSSGTX_SENSE	F36		
Y34	VCCGT				
Y36	VCCGT				
Y38	VCCGT				

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CPU-SK/1151/S/GF

WR59 0/4/SHT/M/X

VCCSA

LGA1151K SKT_H4
LGA1151

AA7	VCCSA	VDDQ_AT18	AT18		
AB6	VCCSA	VDDQ_AT21	AT21		
AB7	VCCSA	VDDQ_AU13	AU13		
AB8	VCCSA	VDDQ_AU15	AU15		
AC7	VCCSA	VDDQ_AU19	AU19		
AC8	VCCSA	VDDQ_AU23	AU23		
N7	VCCSA	VDDQ_AV11	AV11		
P7	VCCSA	VDDQ_AV17	AV17		
R7	VCCSA	VDDQ_AV21	AV21		
T7	VCCSA	VDDQ_AW10	AW10		
U7	VCCSA	VDDQ_AW14	AW14		
Y6	VCCSA	VDDQ_AW25	AW25		
Y7	VCCSA	VDDQ_AY12	AY12		
Y8	VCCSA	VDDQ_AY16	AY16		
W7	VCCSA	VDDQ_AY18	AY18		
V7	VCCSA	VDDQ_AY23	AY23		
AA6	VCCSA	VCCPLL_OC	AJ9	VCCPLL_S	WR86 0/4/SHT/M/X VDDQ

VCCIO

AK11	VCCIO	VCCOPC_AJ30	AJ30		
AK14	VCCIO	VCCOPC_AJ27	AJ27		
AK24	VCCIO	VCCOPC_AJ28	AJ28		
AJ23	VCCIO	VCCOPC_AJ29	AJ29		
M8	VCCIO	VCCOPC_AK27	AK27	WR60	0/4/SHT/M/X
P8	VCCIO	VCCEOPIO	AJ25		
T8	VCCIO	VCCEOPIO	AJ26	WR61	0/4/SHT/M/X
U8	VCCIO				
W8	VCCIO				

VCCST_VCCPLL V5 VCCST_V5
VCCSFUSEPRG V6 VCCST_V6
VCCST_VCCPLL V4 VCCPLL

VCC_OPC_1P8_AB37	AB37	WR62	0/4/SHT/M/X		
VCC_OPC_1P8_AB38	AB38	WR63	0/4/SHT/M/X		
VCCSA_SENSE	AD5				
VCCIO_SENSE	AF4				
VSS_SAIO_SENSE	AE4				
VCCOPC_SENSE	AK21				
VCCEOPIO_SENSE	AJ24				
VSSOPC_EOPIO_SENSE	AK22				

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CPU-SK/1151/S/GF

* 刪 VCCPLL_OC

* 刪 net

LGA1151L SKT_H4
LGA1151

J8	RSVD_TP_J8	RSVD_TP_H11	H11		
J7	RSVD_TP_J7	RSVD_TP_H12	H12		
L8	RSVD_TP_L8				
K8	RSVD_TP_K8	RSVD_TP_AW38	AW38		
		RSVD_TP_AV39	AV39		
AV1	RSVD_TP_AV1				
AW2	RSVD_TP_AW2	RSVD_AU39	AU39		
		RSVD_AU40	AU40		
H8	RSVD_H8				
K10	RSVD_K10	VSS_AT15	AT15		
L10	RSVD_L10	VSS_AR23	AR23		
J17	RSVD_J17	VSS_AR22	AR22		
B39	RSVD_B39				
J19	RSVD_J19	RSVD_J15	J15		
C40	RSVD_C40	RSVD_J14	J14		
G8	RSVD_G8	RSVD_AU9	AU9		
AY3	RSVD_AY3	RSVD_AU10	AU10		
D1	PROC_TRIGIN	RSVD_J13	J13		
B3	PROC_TRIGOUT	RSVD_K13	K13	WR89	560/4/1
		RSVD_J11	J11		
L12	RSVD_L12	RSVD_D15	D15		
K12	RSVD_K12	RSVD_K11	K11		

13_N_PCH_CPU_TP
13_A_CPU_PCH_TO_R WR88 33/4 A_CPU_PCH_TO_R

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CPU-SK/1151/S/GF

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Title	CPU LGA1151-C
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Gigabyte Technology		
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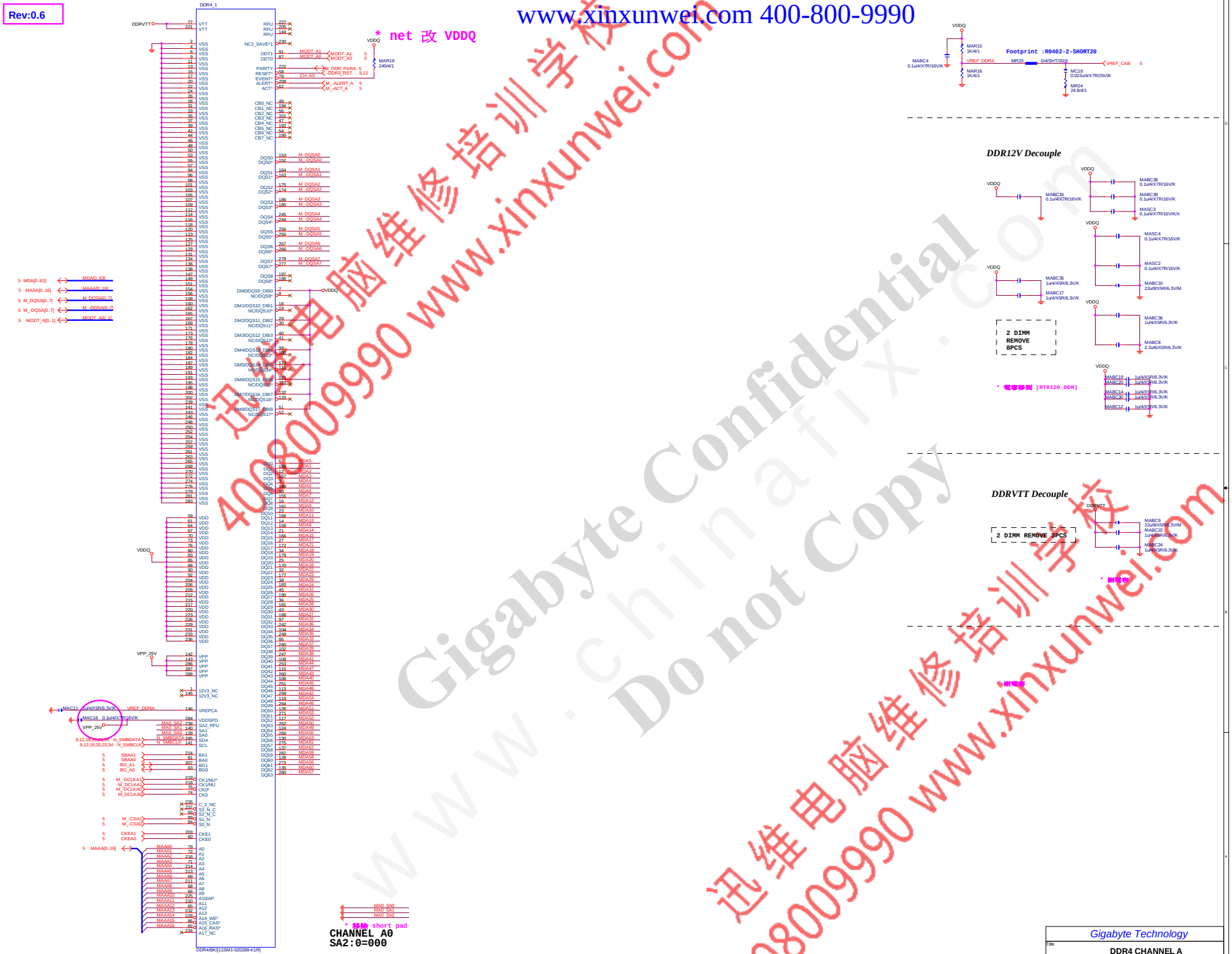
Rev:0.6



DDR12V Decouple

DDRVTT Decouple

Gigabyte Technology	
Title	DDR4 CHANNEL A
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Rev:0.6

* net 改 VDDQ

DDR4_2

DDRVTT

VDDQ

MAR22 240/4/1

MAR18 1K/4/1 Footprint :R0402-2-SHORT20

MAR17 1K/4/1

MAR25 04/SHT/200X

MC20 0.022u/4/X7R/25V/K

MR26 24.9/4/1

MAC5 0.1u/4/X7R/16V/K

MAC12 0.1u/4/X7R/16V/K

MAC15 0.1u/4/X7R/16V/K

VPP_25V

MB0_SA0
MB0_SA1
MB0_SA2

* 移除 short pad

CHANNEL B0
SA2:0=010

DDR4/BK[11SM1-S20288-K1R]

Gigabyte Technology

Title: DDR4 CHANNEL B

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* Rev0.2

PCHE
SPT-H_PCH
GPP_I0/DDPB_HPD0
GPP_I1/DDPC_HPD1
GPP_I2/DDPD_HPD2
GPP_I3/DDPE_HPD3
GPP_I4/EDP_HPD
GPP_I7/DDPC_CTRLCLK
GPP_I8/DDPC_CTRLDATA
GPP_I5/DDPB_CTRLDATA
GPP_I6/DDPB_CTRLDATA
GPP_I9/DDPD_CTRLCLK
GPP_I10/DDPD_CTRLDATA
5 OF 12
SPT_PCH_DT/SKT/[10HB1-03B150-20R]

PCHG
SPT-H_PCH
GPP_A16/CLKOUT_48
CLKOUT_CPUNSSC_P
CLKOUT_CPUNSSC
CLKOUT_CPUBCLK_P
CLKOUT_CPUBCLK
XTAL24_OUT
XTAL24_IN
XCLK_BIASREF
RTCX1
RTCX2
GPP_B5/SRCCLKREQ0#
GPP_B6/SRCCLKREQ1#
GPP_B7/SRCCLKREQ2#
GPP_B8/SRCCLKREQ3#
GPP_B9/SRCCLKREQ4#
GPP_B10/SRCCLKREQ5#
GPP_H0/SRCCLKREQ6#
GPP_H1/SRCCLKREQ7#
GPP_H2/SRCCLKREQ8#
GPP_H3/SRCCLKREQ9#
GPP_H4/SRCCLKREQ10#
GPP_H5/SRCCLKREQ11#
GPP_H6/SRCCLKREQ12#
GPP_H7/SRCCLKREQ13#
GPP_H8/SRCCLKREQ14#
GPP_H9/SRCCLKREQ15#
CLKOUT_PCIE_N15
CLKOUT_PCIE_P15
CLKOUT_PCIE_N14
CLKOUT_PCIE_P14
CLKOUT_PCIE_N13
CLKOUT_PCIE_P13
CLKOUT_PCIE_N12
CLKOUT_PCIE_P12
CLKOUT_ITPXDP
CLKOUT_ITPXDP_P
CLKOUT_CPUPCIBCLK
CLKOUT_CPUPCIBCLK_P
CLKOUT_PCIE_N0
CLKOUT_PCIE_P0
CLKOUT_PCIE_N1
CLKOUT_PCIE_P1
CLKOUT_PCIE_N2
CLKOUT_PCIE_P2
CLKOUT_PCIE_N3
CLKOUT_PCIE_P3
CLKOUT_PCIE_N4
CLKOUT_PCIE_P4
CLKOUT_PCIE_N5
CLKOUT_PCIE_P5
CLKOUT_PCIE_N6
CLKOUT_PCIE_P6
CLKOUT_PCIE_N7
CLKOUT_PCIE_P7
CLKOUT_PCIE_N8
CLKOUT_PCIE_P8
CLKOUT_PCIE_N9
CLKOUT_PCIE_P9
CLKOUT_PCIE_N10
CLKOUT_PCIE_P10
CLKOUT_PCIE_N11
CLKOUT_PCIE_P11
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SPT_PCH_DT/SKT/[10HB1-03B150-20R]

PCIEX16
PCIEX1
PCIEX1
IT8892
RTL8111GUS
M.2

CLK:4/15<1000;Guard GND

32.768KHZ
NX2-SHT
SHW/D0.64*5.08*6.74
NX2
32.768K/12.5p/20ppm/TF38/35K/D

Note.64
Note.63
Note.65
CLK:4/15<1000 mils±100 mils;Guard GND

ON-BOARD DEVICE USED

SB_HEATSIN
LOW COST ICH7 HEATSINK
BLACK HS
PCH_HS
PCH_HS[12SP2-S03507-61R_12SP2-S03507-62R_12SP2-S03507-63R]
同BGAHSINK-Z1704M-HD3 LOW COST

CLOCK 4/4/4//15

ANS 4615054 Gigabyte Technology
Title: PCH CLOCK BUFFER
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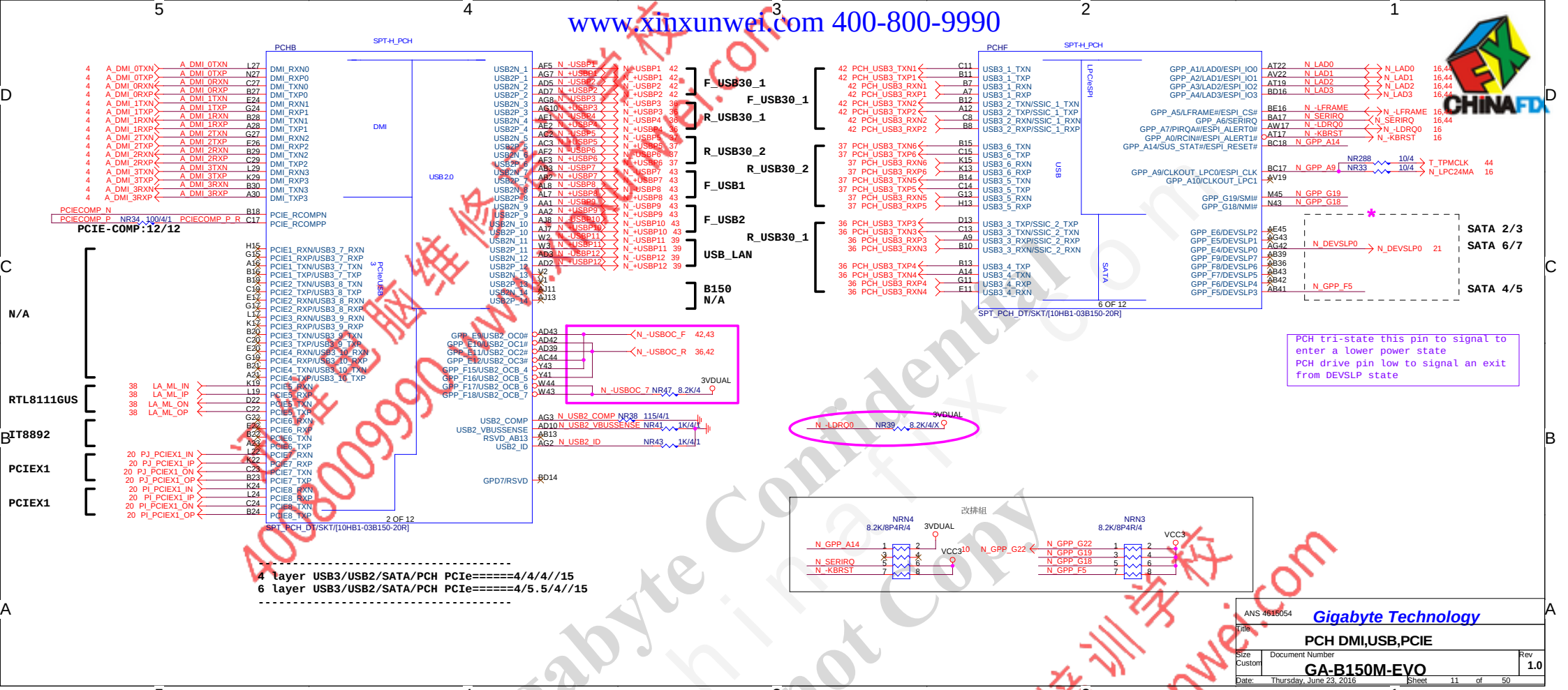


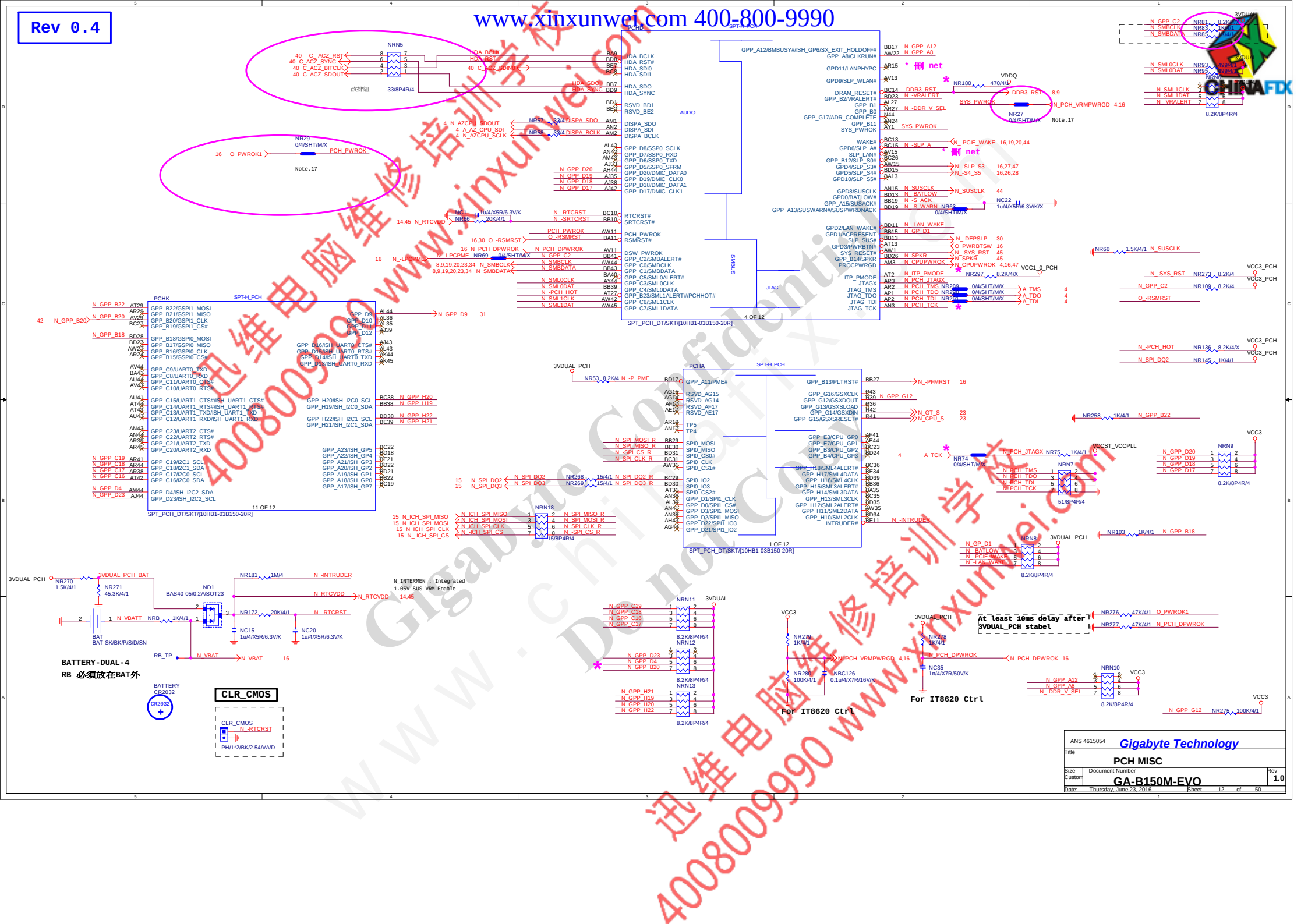
ANS 4615054

Gigabyte Technology

Title: PCH DMI,USB,PCIE

Size	Document Number	Rev
Custom	GA-B150M-EVO	1.0

Date: Thursday, June 23, 2016 Sheet 11 of 50



Rev 0.4

PCHC

SPT-H_PCH

CLINK

CL_CLK
CL_DATA
CL_RST#

FAN

GPP_G8/FAN_PWM_0
GPP_G9/FAN_PWM_1
GPP_G10/FAN_PWM_2
GPP_G11/FAN_PWM_3

GPP_G0/FAN_TACH_0
GPP_G1/FAN_TACH_1
GPP_G2/FAN_TACH_2
GPP_G3/FAN_TACH_3
GPP_G4/FAN_TACH_4
GPP_G5/FAN_TACH_5
GPP_G6/FAN_TACH_6
GPP_G7/FAN_TACH_7

21 N_GPP_G0
21 N_GPP_G1
* 刪 net
20141107

PCIE/SATA

PCIE11_TXP
PCIE11_TXN
PCIE11_RXP
PCIE11_RXN

GPP_F10/SCLOCK
GPP_F11/SLOAD
GPP_F13/SDATAOUT0
GPP_F12/SDATAOUT1

PCIE14_TXN/SATA1B_TXN
PCIE14_TXP/SATA1B_TXP
PCIE14_RXN/SATA1B_RXN
PCIE14_RXP/SATA1B_RXP

PCIE13_TXN/SATA0B_TXN
PCIE13_TXP/SATA0B_TXP
PCIE13_RXN/SATA0B_RXN
PCIE13_RXP/SATA0B_RXP

PCIE12_TXP
PCIE12_TXN
PCIE12_RXP
PCIE12_RXN

PCIE20_TXP
PCIE20_TXN
PCIE20_RXP
PCIE20_RXN

PCIE19_TXP
PCIE19_TXN
PCIE19_RXP
PCIE19_RXN

HOST

GPP_F21/EDP_BKLTCTL
GPP_F20/EDP_BKLTEN
GPP_F19/EDP_VDDEN

THERMTRIP#
PECI
PM_SYNC
PLTRST_CPU#
PM_DOWN

3 OF 12

SPT_PCH_DT/SKT/[10HB1-03B150-20R]

PCIE9_RXN/SATA0A_RXN
PCIE9_RXP/SATA0A_RXP
PCIE9_TXN/SATA0A_TXN
PCIE9_TXP/SATA0A_TXP

PCIE10_RXN/SATA1A_RXN
PCIE10_RXP/SATA1A_RXP
PCIE10_TXN/SATA1A_TXN
PCIE10_TXP/SATA1A_TXP

PCIE15_RXN/SATA2_RXN
PCIE15_RXP/SATA2_RXP
PCIE15_TXN/SATA2_TXN
PCIE15_TXP/SATA2_TXP

PCIE16_RXN/SATA3_RXN
PCIE16_RXP/SATA3_RXP
PCIE16_TXN/SATA3_TXN
PCIE16_TXP/SATA3_TXP

PCIE17_RXN/SATA4_RXN
PCIE17_RXP/SATA4_RXP
PCIE17_TXN/SATA4_TXN
PCIE17_TXP/SATA4_TXP

SATA EXPRESS

PCIE18_RXN/SATA5_RXN
PCIE18_RXP/SATA5_RXP
PCIE18_TXN/SATA5_TXN
PCIE18_TXP/SATA5_TXP

GPP_E8/SATALED#
GPP_E0/SATAXPCIE0/SATAGP0
GPP_E1/SATAXPCIE1/SATAGP1
GPP_E2/SATAXPCIE2/SATAGP2
GPP_F0/SATAXPCIE3/SATAGP3
GPP_F1/SATAXPCIE4/SATAGP4
GPP_F2/SATAXPCIE5/SATAGP5
GPP_F3/SATAXPCIE6/SATAGP6
GPP_F4/SATAXPCIE7/SATAGP7

N_SATALED 45

* 1: SATA (STandard)
0: SATA EXPRESS

NR68 51/4/1 N_-THRMTRIP 16
WR83 33/4 A_PMSYNC 4
N_-CPURST 4
A_PMDOWN 4

A_PECI_R NR86 1K/4/1

PCHJ

SPT-H_PCH

VSS_BD2
VSS_BD45
VSS_BD44
VSS_BE44
VSS_D45
VSS_A42
VSS_B45
VSS_B44
VSS_A4
VSS_A3
VSS_B2
VSS_A2
VSS_B1
VSS_BB1
VSS_BC1
VSS_A44

RSVD_C1
RSVD_D1

RSVD_AR22
RSVD_W13
RSVD_U13
RSVD_P31
RSVD_N31
RSVD_P27
RSVD_R27
RSVD_N29
RSVD_P29
RSVD_AN29
RSVD_R24
RSVD_P24
PREQ#
PRDY#
CPU_TRST#
PCH_TRIGOUT
PCH_TRIGIN

10 OF 12

SPT_PCH_DT/SKT/[10HB1-03B150-20R]

C1/D1 公版NC pin

N_PCH_TRST NR296 0/4/SHT/MIX N_TRST 4
N_PCH_CPU_TI_R NR192 33/4 N_PCH_CPU_TI 6
A_CPU_PCH_TO 6

双排阻

VCC3

NRN14
N_GPP_F13 1 2
N_GPP_F12 3 4
N_GPP_F11 5 6
N_GPP_F10 7 8
8.2K/8P4R/4

3VDUAL Note.24

NRN15
N_GPP_F2 1 2
N_GPP_E1 3 4
N_GPP_E2 5 6
N_GPP_E0 7 8
8.2K/8P4R/4

NRN16
N_GPP_F1 1 2
N_GPP_F4 3 4
N_GPP_F3 5 6
N_GPP_F0 7 8
8.2K/8P4R/4

ANS 4615054 Gigabyte Technology

Title: PCH SATA,PCIE,SATA_EXPRESS

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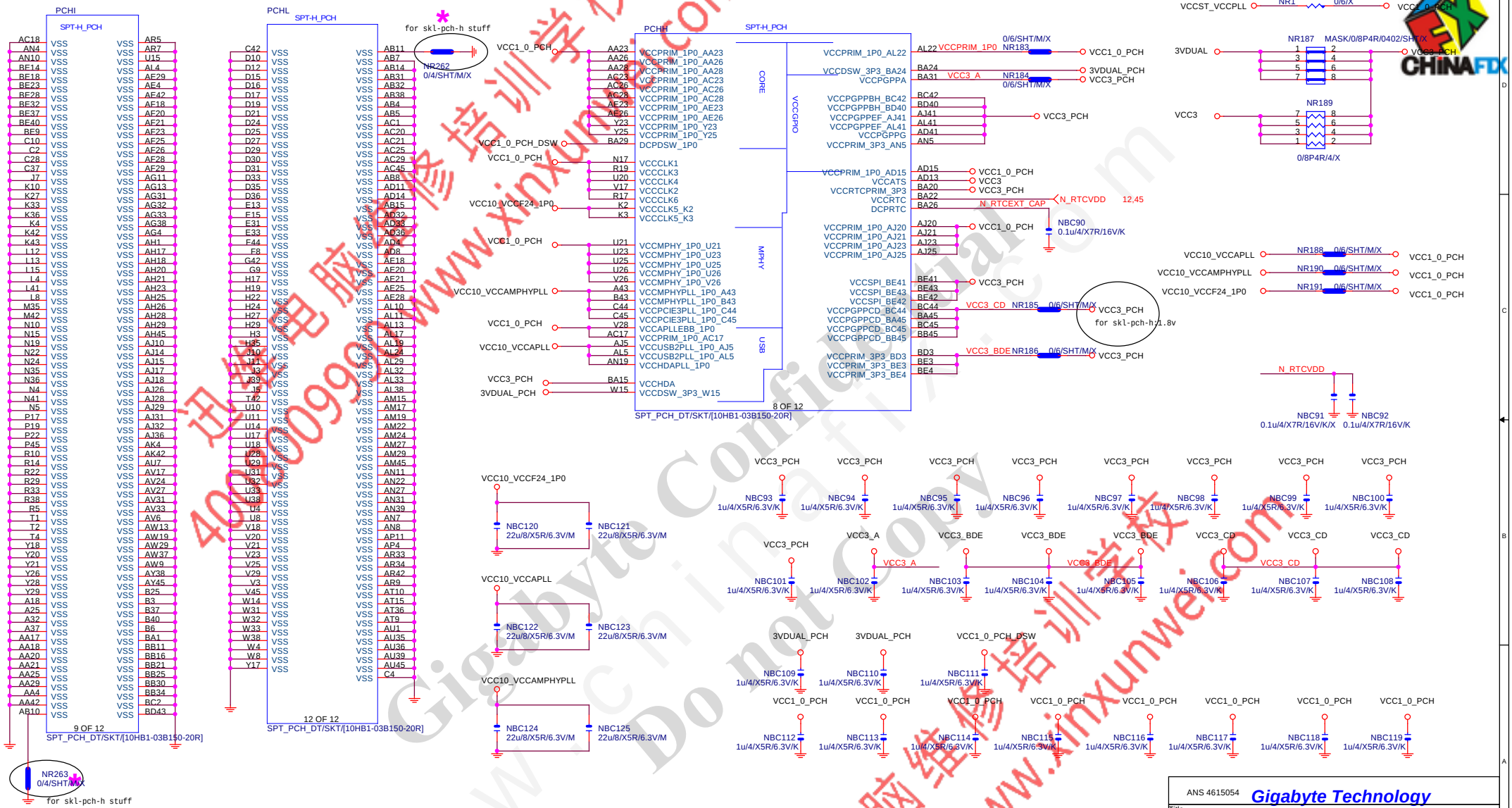
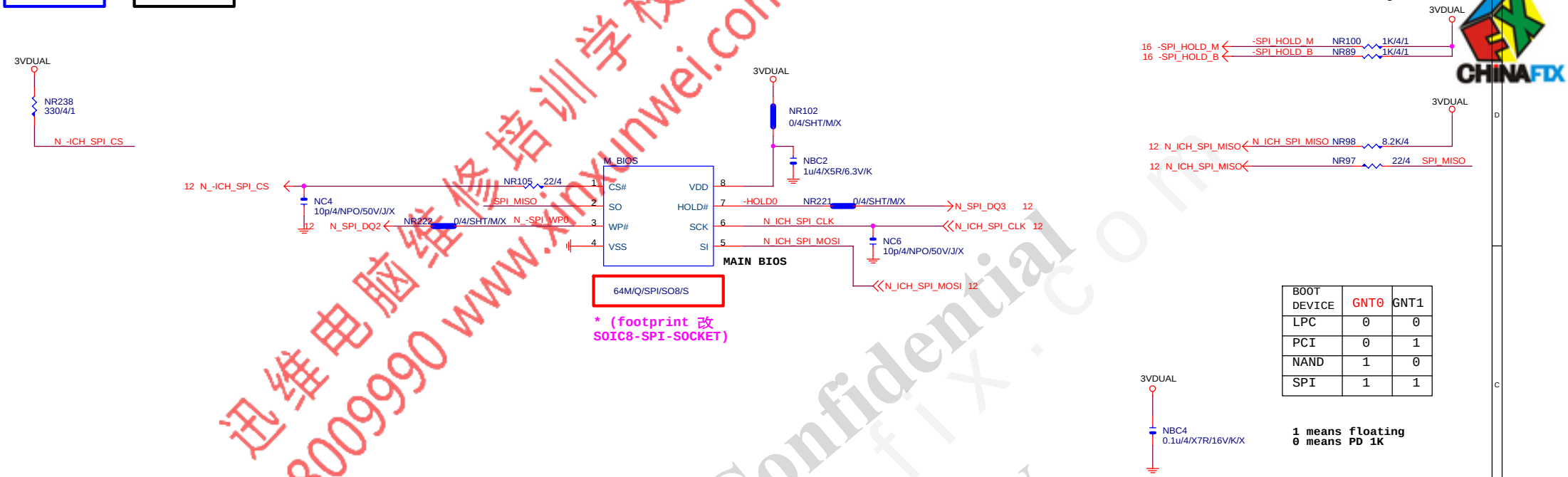


ANS 4615054	Gigabyte Technology	
Title	PCH PWR, GND	
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 14 of 50	

Rev 0.1

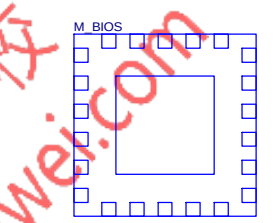
BIOS

MOSI For DMI RX Termination Voltage



BOOT DEVICE	GNT0	GNT1
LPC	0	0
PCI	0	1
NAND	1	0
SPI	1	1

1 means floating
0 means PD 1K



LCP/G-FL/1.27mm/200MIL/WHITE[10SL2-000008-31R]/X

* 試產先上 , PVT 移除

BIOS_PH

Gigabyte Technology		
Title: BIOS		
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SIO IT8628BX REV:1.08

MB ID

IT8628E_BX

SIO

CPU_FAN
SYS_FAN1
SYS_FAN2
SYS_FAN3 sensor

THRMTRIP 1
THRMTRIP 2

Placement CPU

CPU 端 A_-THRMTRIP不可與PCH及SIO N_-THRMTRIP直接連接。否則會出現無法拉LOW情況。

REV:1.03(上CX，可不上0 ohm電阻)

FOR SYS_FAN3確認SYS_TEMP

PWR SHT

SIO PU

新增

SIO STRAP

改排阻

EUP control detect

JP2	1	Disable WDT
	0	Enable WDT to rest PWROK
JP3	1	SPI-Flash Disable
	0	SPI-Flash Enable
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP5	1	anti-surge Disable
	0	anti-surge Enable
JP3 JP5	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	1 0	The default value of EC Index 63h/6Bh/73h is FFh
	0 1	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.

ERP WAKE on LAN (依LAN組態選擇)

(組態一) Realtek/ATHEROS LAN

FAN TABLE	
CPU_FAN	FAN_CTL1 FAN_TAC1
SYS_FAN1	FAN_CTL2 FAN_TAC2
SYS_FAN2	FAN_CTL3 FAN_TAC3
SYS_FAN3	FAN_CTL5 FAN_TAC5
OPT_FAN or SYS_FAN4	N/A
THRMTRIP1	YES PIN60
THRMTRIP2	YES PIN94

IT8620E GPIO問題匯整	
PIN 50	GP26-第一次接上POWER時會拉 LO
PIN 90/91	DEFAULT為HDLED FUNCTION, GP93 BYPASS TO GP92 高溫時 GP92 會被拉Lo(ITE BUG)
PIN 108	GP40--- POWER ON 時會拉 LO
PIN 111/112	MOUSE 跟FAN6 FUNCTION 擇一使用,不然會互相干擾
PIN 22	PIN22，需高於3V，若低於 該部分COM PORT及LPT裝置 驅動器會異常動作。

DUAL BIOS OPT STRAP

Power leakage

SIO_18V

internal power pin, max 22nF cap

SIO CAP

CLOSE SIO PIN4 2_5LEVEL

Gigabyte Technology

Title: ITE 8628 LPC IO

Size: B | Document Number: GA-B150M-EVO | Rev: 1.0

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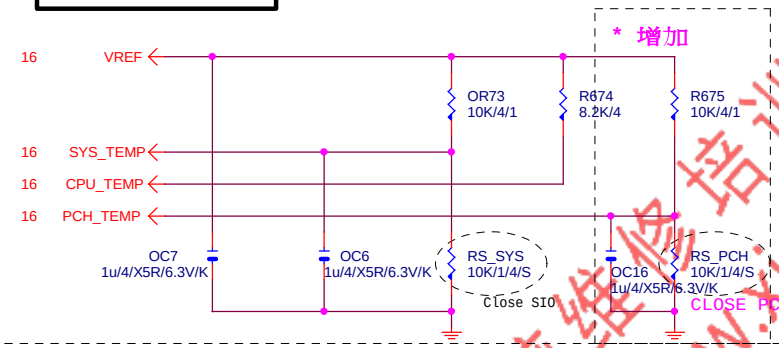
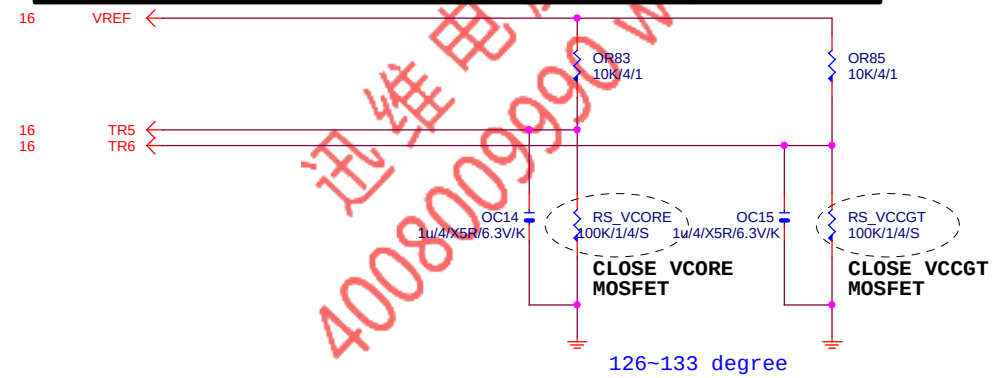
TEMP H/W MONITOR REV 1.04



RS_VCORE、RS_VCCGT CLOSE CPU VCORE & VCCGT MOSFET

-PROCHOT:有mos heartsink不用prochot function

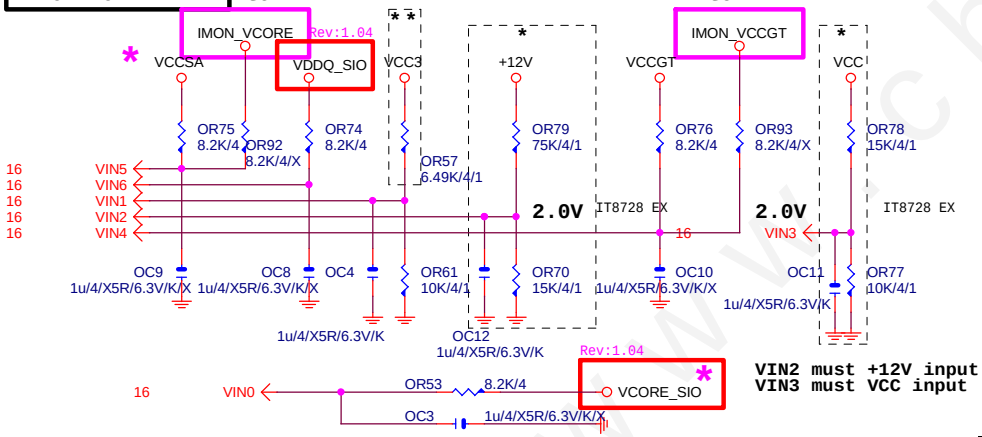


VOLTAGE-- H/W MONITOR

Connect to PWM

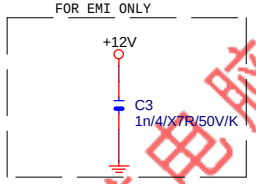
* IT8728 BX
** IT8728 CX

Connect to PWM



VIN2 must +12V input
VIN3 must VCC input

The division voltage of VIN2 & VIN3 must be around 2.9V



Gigabyte Technology		
Title: HWM,KB/MS, FAN CTRL		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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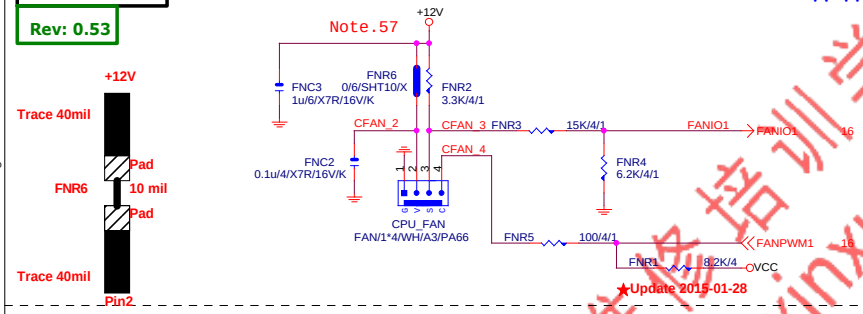
CPU SMART FAN

Rev: 0.53



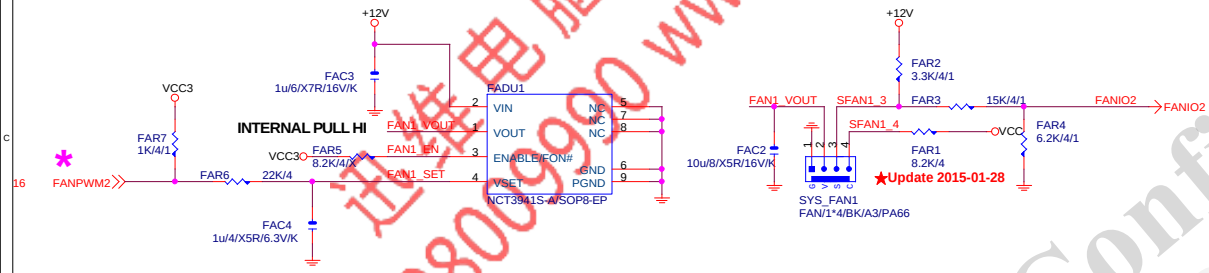
SYSTEM FAN1

A.

Linear SYS_FAN

Enable Function (NCT3941S)

Full Turn On Function (NCT3941S-A)



Gigabyte Technology		
Title: FAN CTRL		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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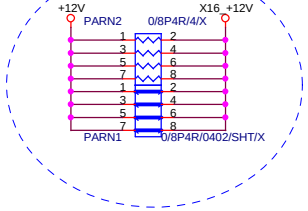
Rev 0.2

+12 protect short-wire test



PCIESLOT-164STH

PCIEX16

3GIO_*16

KEY

PCI-E/16X-164P/GY/LONG DOUBLE/HK*2

PCIEX16:16/5/5/5/16

PCI-E REV:1.1--> 2.5GHZ

PCE-E X1(單向) BANDWITH=2.5GHz*(8b/10b)=2Gb/s=250MB/s

PCE-E X1(雙向) BANDWITH=2.5GHz*(8b/10b)X2=4Gb/s=500MB/s

PCE-E X16(單向) BANDWITH=2.5GHz*(8b/10b)X16=32Gb/s=4GB/s

PCE-E X16(雙向) BANDWITH=2.5GHz*(8b/10b)X16X2=64Gb/s=8GB/s

PCI-E REV:2.0--> 5GHZ

Title	PCI EXPRESS * 16
Size	Custom
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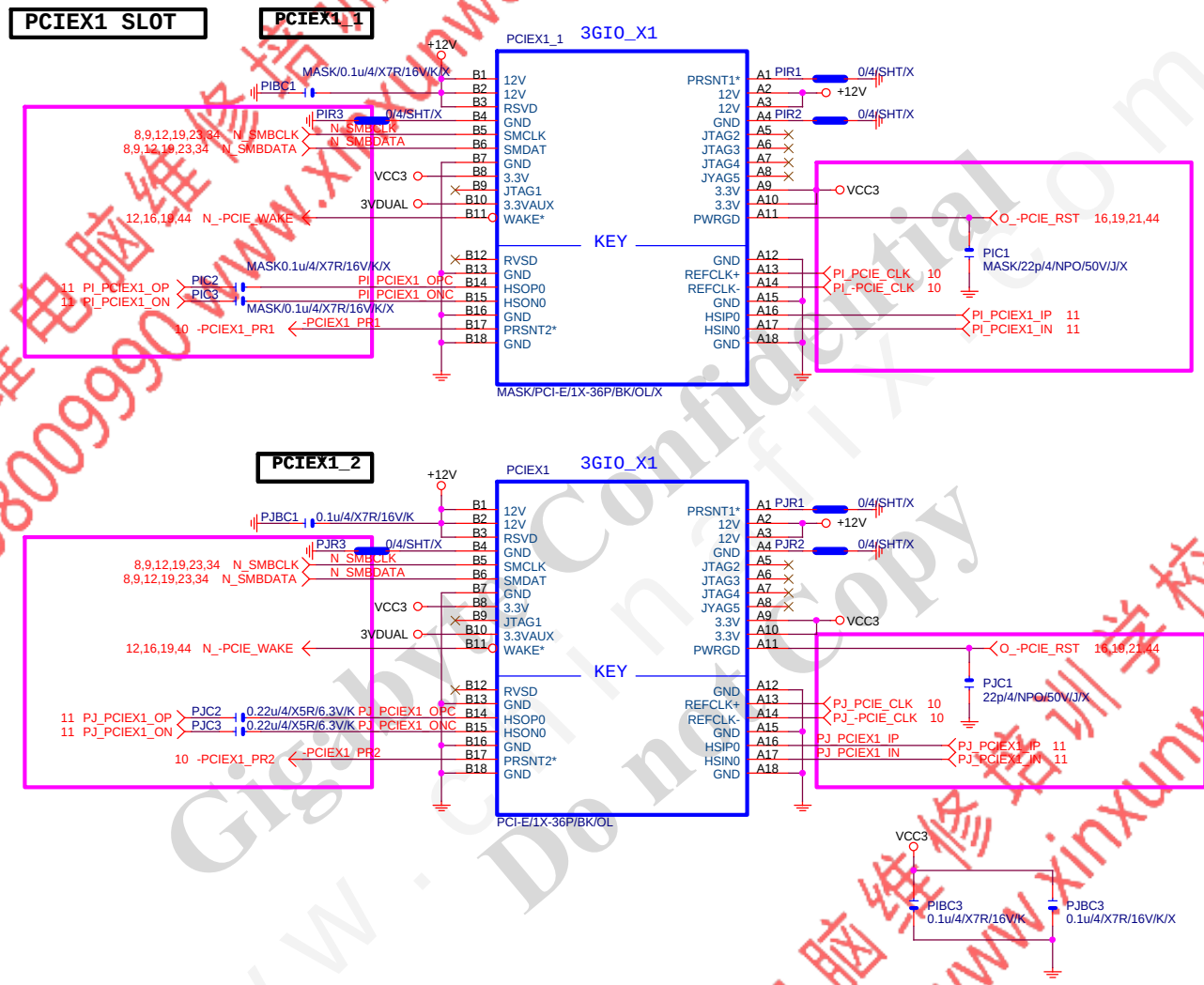
Rev 0.2



Gigabyte Technology		
Title: PCIE_X1 1,2		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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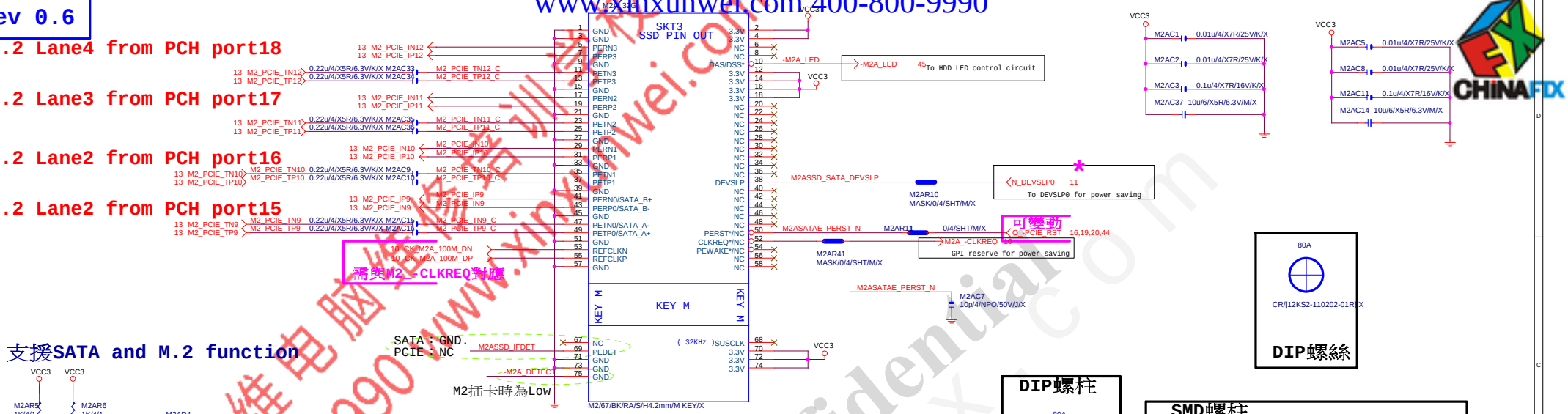
Rev 0.6

M.2 Lane4 from PCH port18

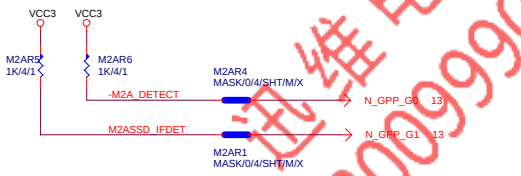
M.2 Lane3 from PCH port17

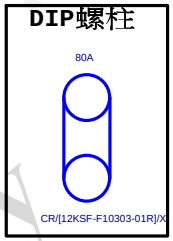
M.2 Lane2 from PCH port16

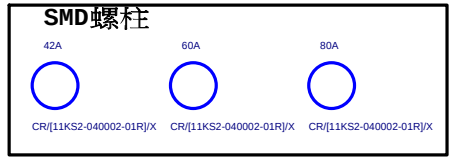
M.2 Lane2 from PCH port15



支援SATA and M.2 function







M.2 有插卡/沒插卡 GPP_G0	M.2插何種卡？ GPP_G1	SATA Express 插何種硬碟？ GPP_E0/E2/F1	IO15 (S0)	IO16 (S1)	IO17	IO18	IO19 (S0)	IP20 (S1)
有插卡 (Low)	SATA Mode (Low)	SATA (Hi)	SATA (M.2)	PCIE x1	PCIE x1	PCIE X1	PCIE x1	SATA
		SATA Express (Low)	SATA (M.2)	PCIE x1	PCIE x1	PCIE x1	SATA Express	
	PCIE Mode (Hi)	SATA (Hi)	PCIE x4 (For M.2)				SATA	SATA
		SATA Express (Low)	PCIE x4 (For M.2)				SATA Express	
沒插卡 (Hi)	Don't Care (Hi)	SATA (Hi)	PCIE x4				SATA	SATA
		SATA Express (Low)	PCIE x4				SATA Express	

Gigabyte Technology

Title: M.2 X4

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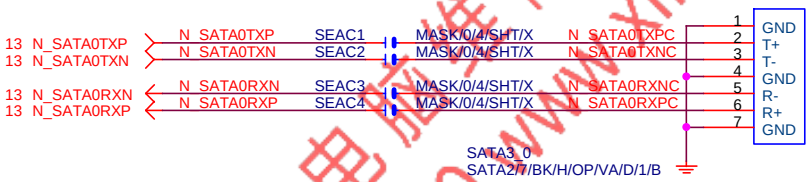
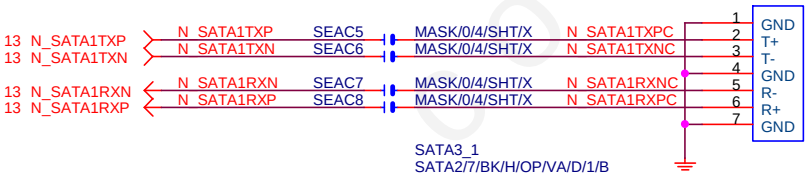
Rev 0.5a

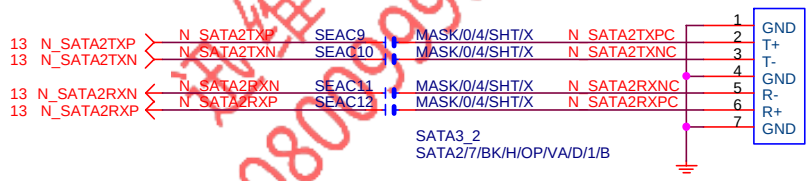
Note.40



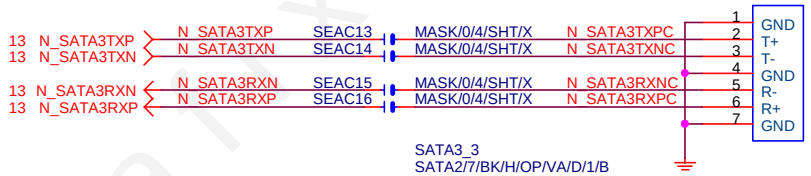
SATA3_0
SATA2/7/BK/H/OP/VA/D/1/B



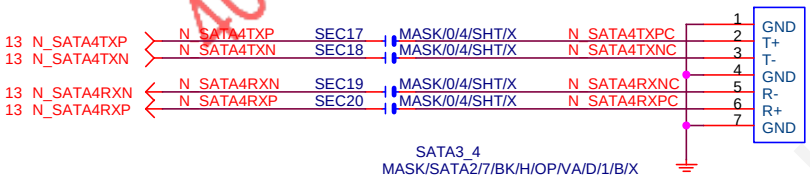
SATA3_1
SATA2/7/BK/H/OP/VA/D/1/B



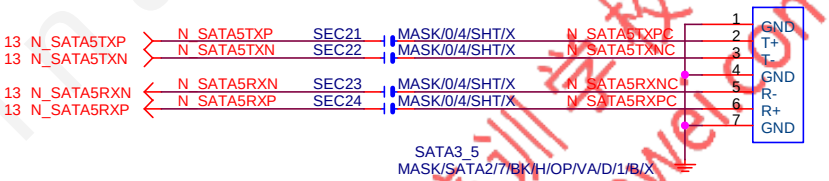
SATA3_2
SATA2/7/BK/H/OP/VA/D/1/B



SATA3_3
SATA2/7/BK/H/OP/VA/D/1/B



SATA3_4
MASK/SATA2/7/BK/H/OP/VA/D/1/B/X



SATA3_5
MASK/SATA2/7/BK/H/OP/VA/D/1/B/X

Gigabyte Technology

Title: SATA EXPRESS

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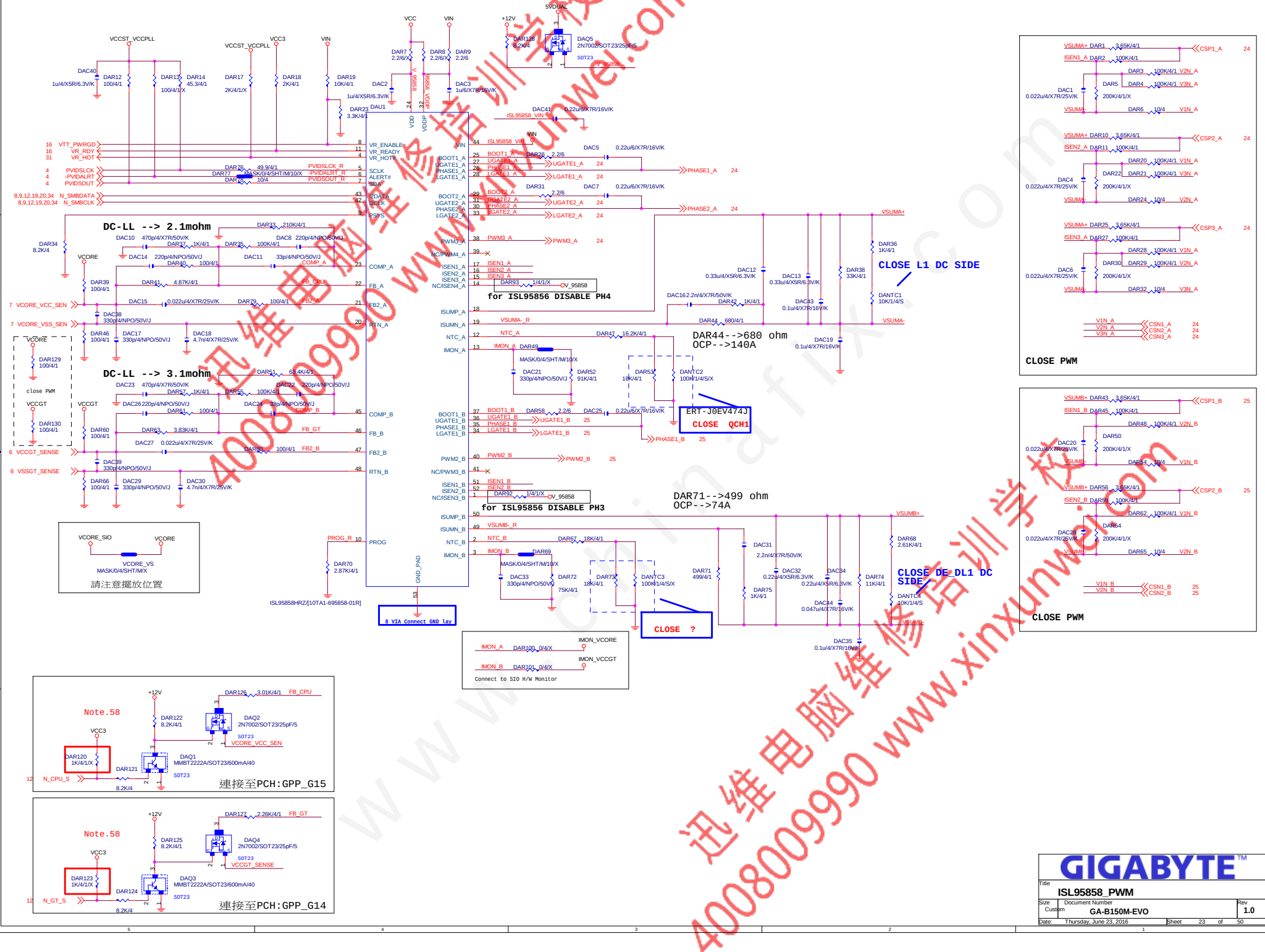

Title	ISL95858_PWM
Size	Custom
Document Number	GA-B150M-EVO
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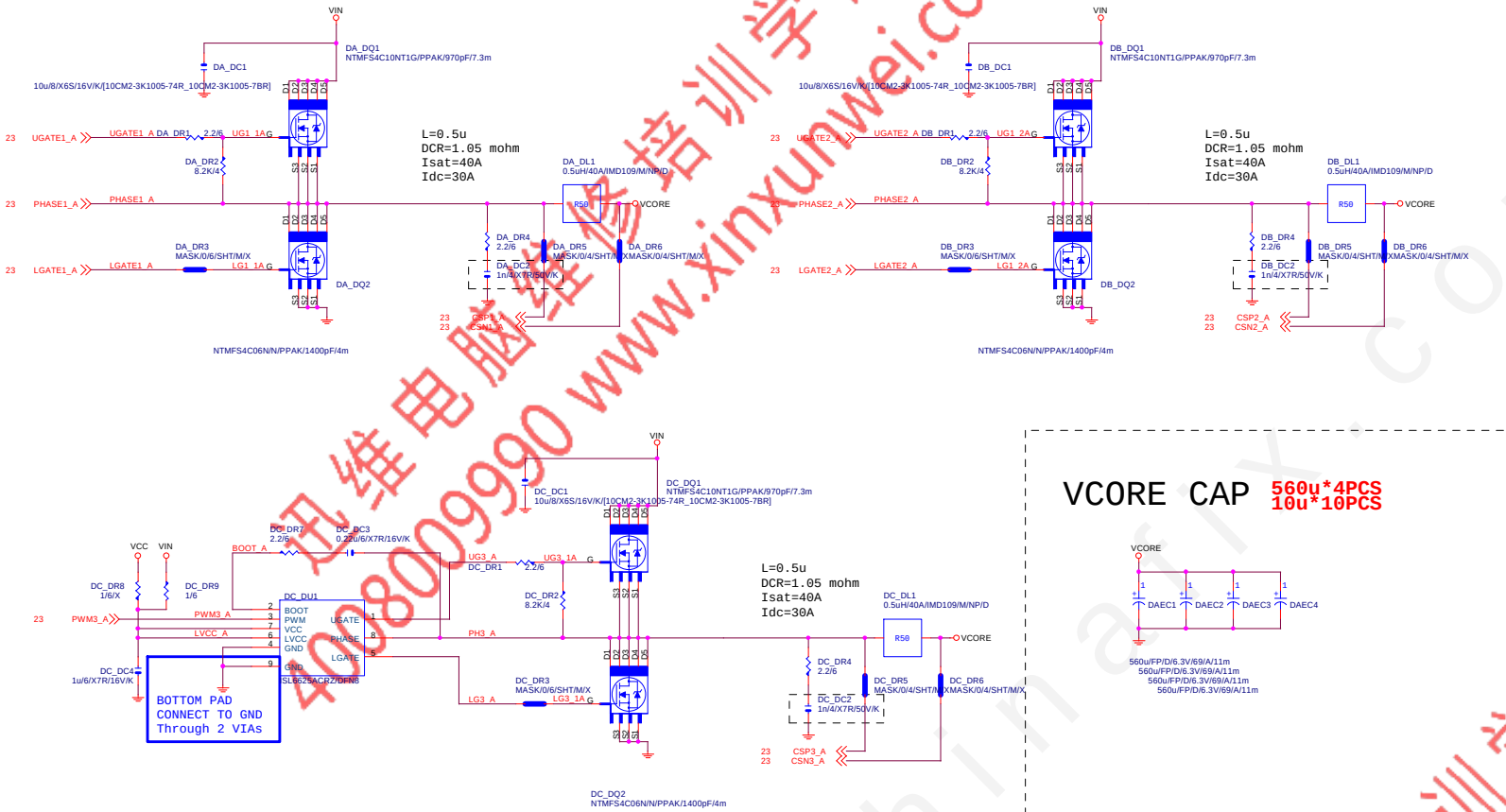
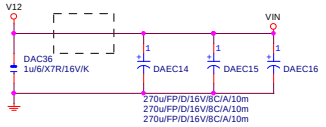
REV:0.91

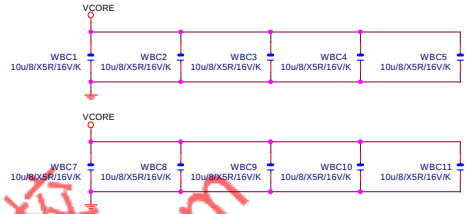
VCORE



VIN CAP 270u*3PCS



VCORE CAP 560u*4PCS 10u*10PCS



GIGABYTE™

Title	ISL95858_MOS	
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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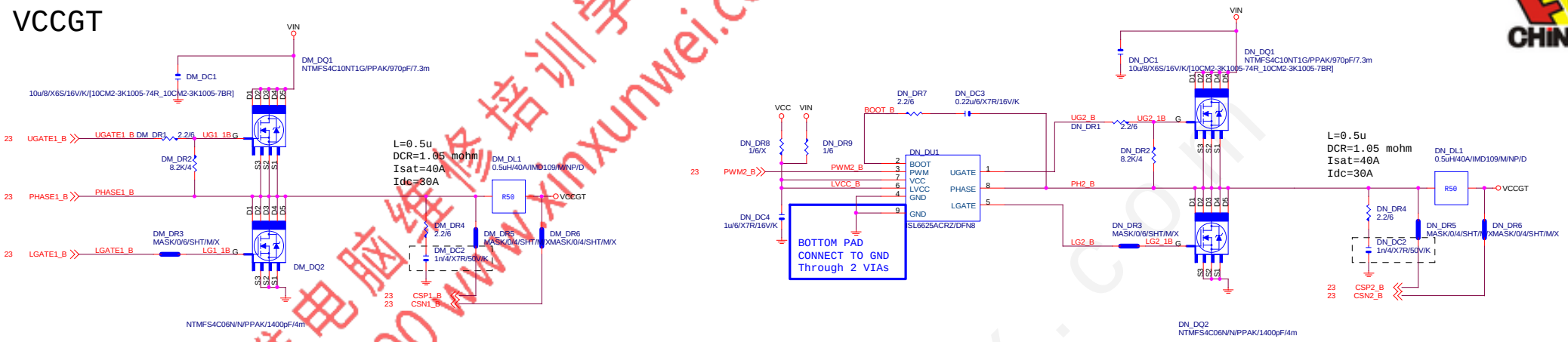
VCCGT



VCCGT CAP

560u*2PCS
10u*2PCS

GIGABYTE			
Title: ISL95858_MOS			
Size: Custom	Document Number: GA-B150M-EVO		Rev: 1.0
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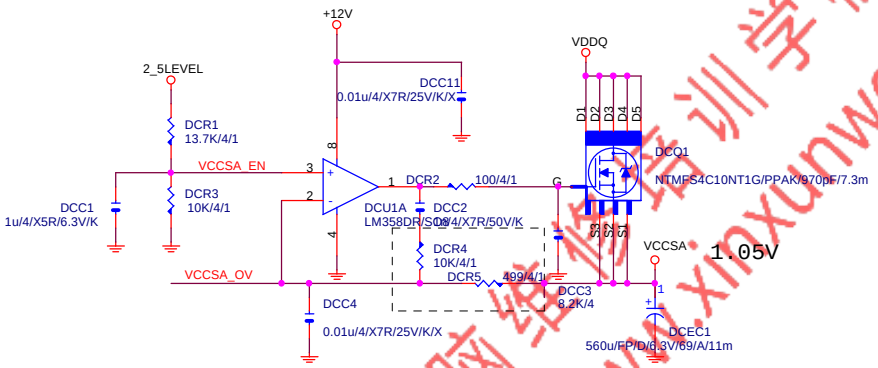
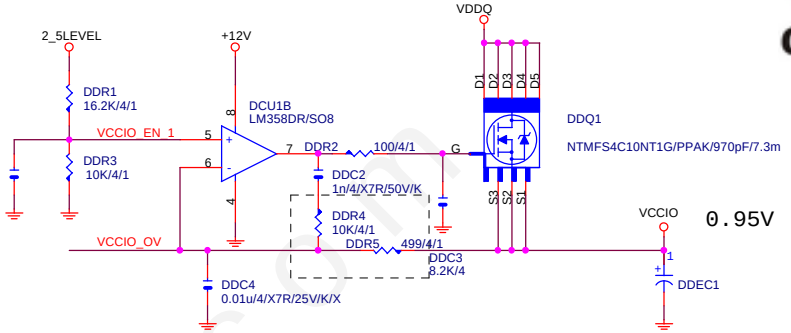
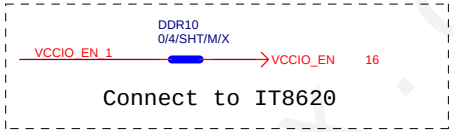
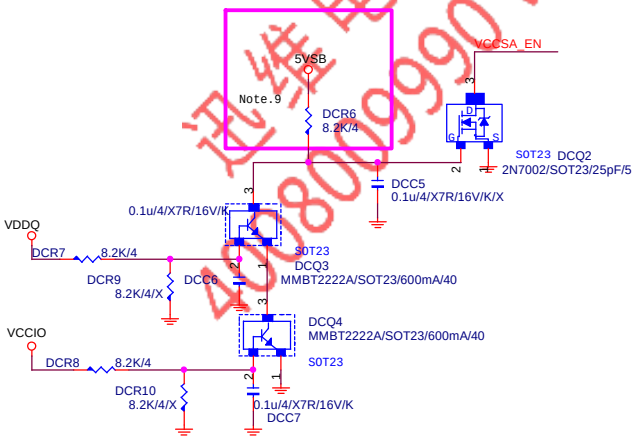
VCCSA REV:0.4

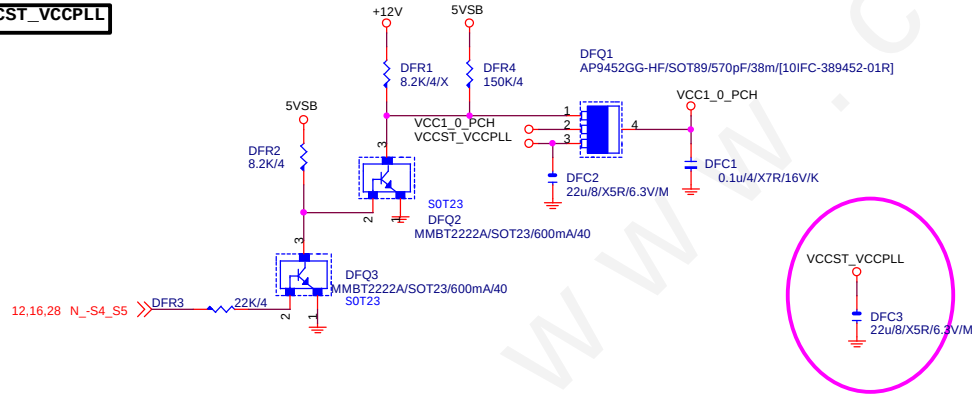








VCCST_VCCPLL



GIGABYTE

Title: VCCSA_VCCIO		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 26 of 50	

REV:0.38

DDR4

上件

MA_DR38.MA_DC15

VPP_25V使用8120.8068A.RT8237時上件

CLOSE TO DDR POWER PLANE

FS=290K
OCP=30A

DDR_VIN_CAP
560u*2PCS

CHOKE與CAP料號可變

SUPPORT DDR4 1.2V
25A MAX
L=0.5u
DCR=1.05 mohm
Isat=40A
Idc=30A

請放置CHOKE一出來位置.先預留.
請自行確認ripple後再決定是否上件

Remote sense請從最重的負載端點拉回

PIN7-->20mil
PIN1-->6mil
PIN2-->6mil
PIN5-->6mil
PIN3-->6mil

1H1L規格移除

PWR SEQ

(N/A)

For power sequence require

Connect to IT8620

VPP_25V使用8120時上件

MAU1上RT9045時上件(不可MASK)

(N/A)

DDRVTT

MAU1上NCT3103S時上件(不可以改short pad)

DDR CAP 560u*4PCS 22u*2PCS

* 大電容 x4

DDRVTT CAP

* 大電容 x0

GIGABYTE

Title: RT8120_DDR POWER

Size: Custom | Document Number: GA-B150M-EVO | Rev: 1.0

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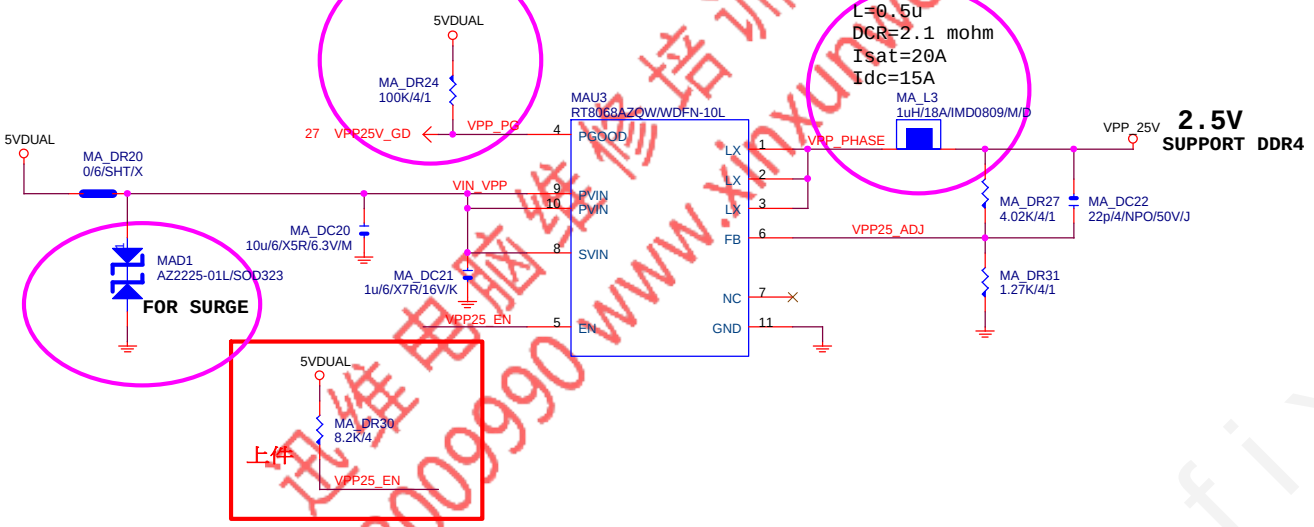
REV:0.33

VPP_25V

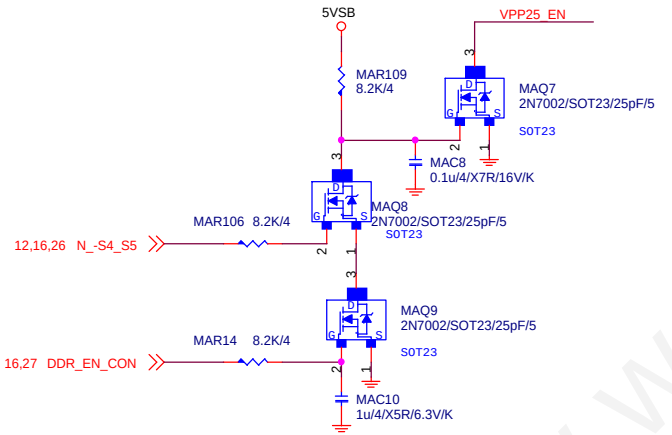
VPP25V_GD不能使用會亂打

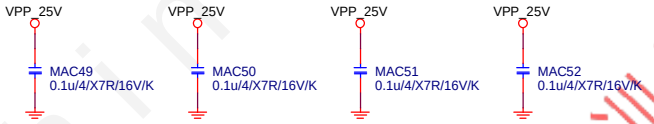
CHOKE與CAP料號可變



PWR SEQ

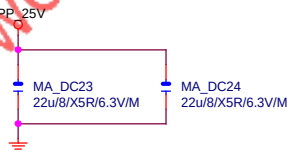
* 刪 MA_DR32





VPP CAP 22u*1PCS

* 大電容 x6

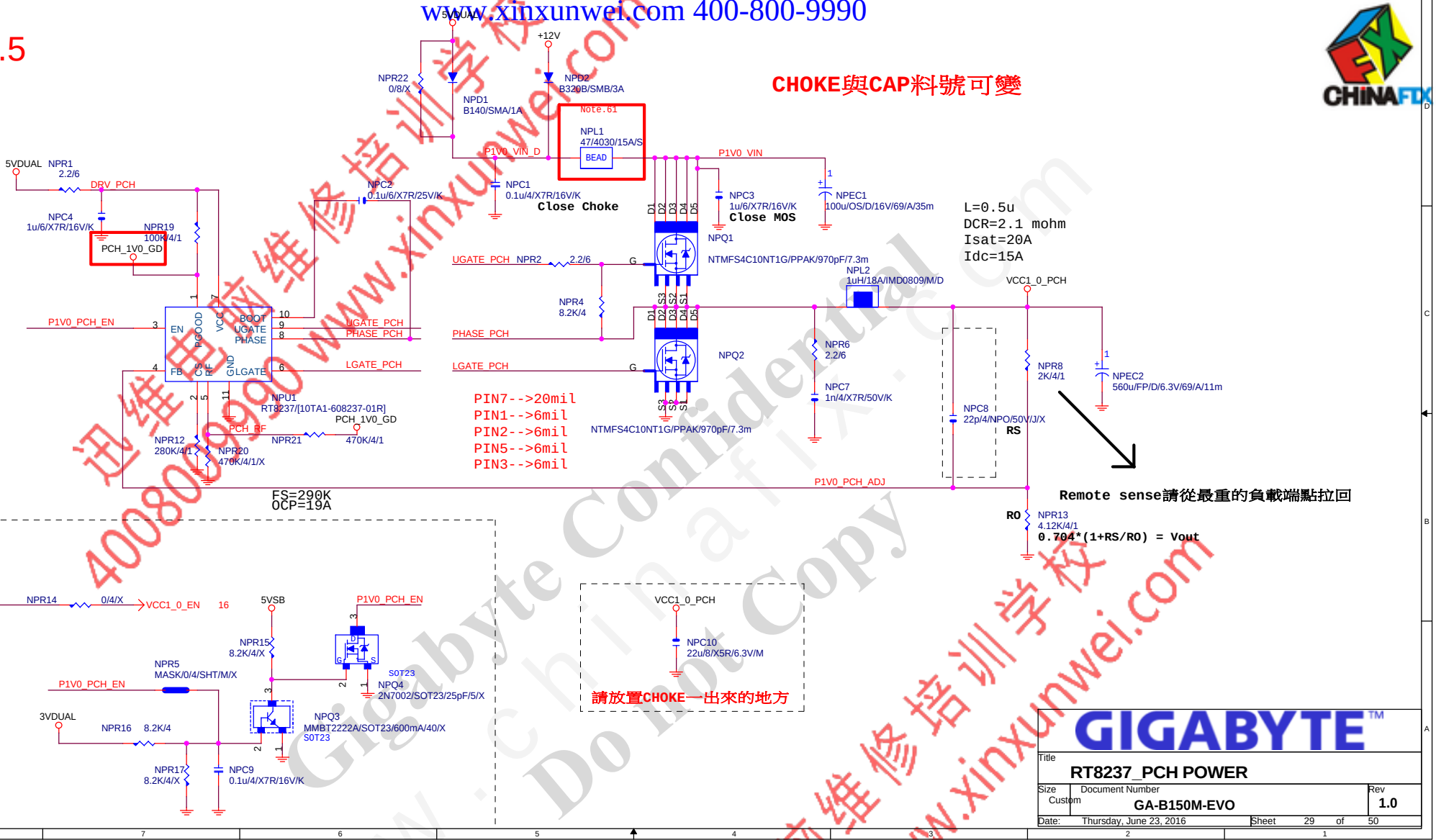


GIGABYTE™

Title	RT8068A_VPP25 POWER	
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 28 of 50	

REV:0.5

CHOKE與CAP料號可變



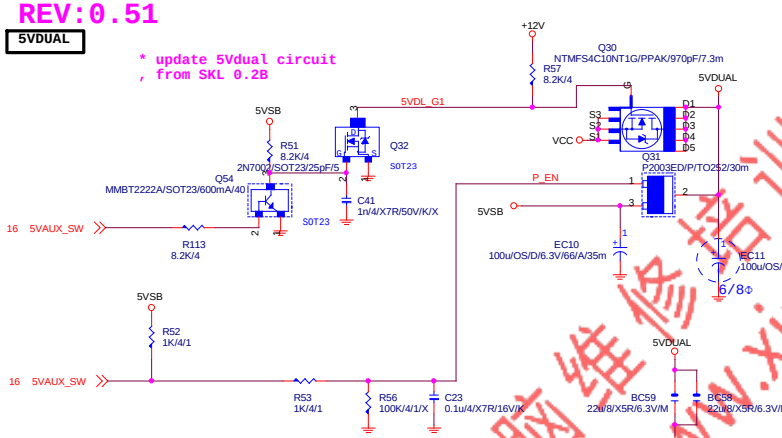
GIGABYTE

Title	RT8237_PCH POWER	
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 29 of 50	

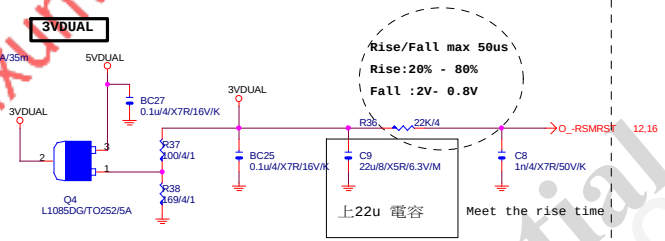
REV:0.51

5VDUAL

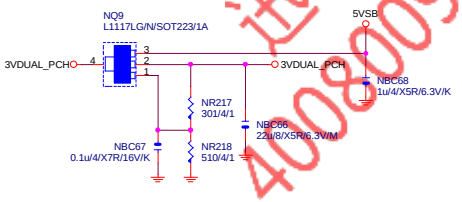
* update 5Vdual circuit
, from SKL 0.2B

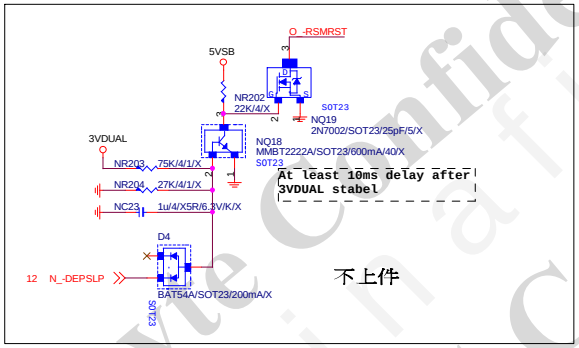


3VDUAL



3VDUAL_PCH





Gigabyte Technology		
Title: DISCRETE POWER		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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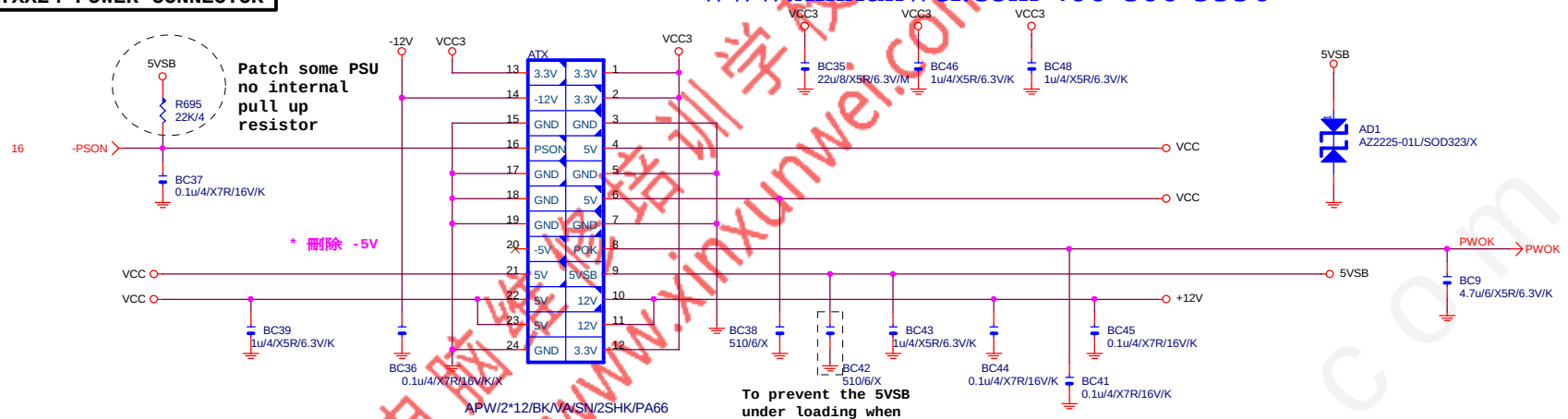
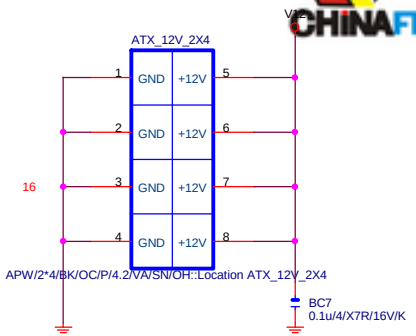
ATXX24 POWER CONNECTOR

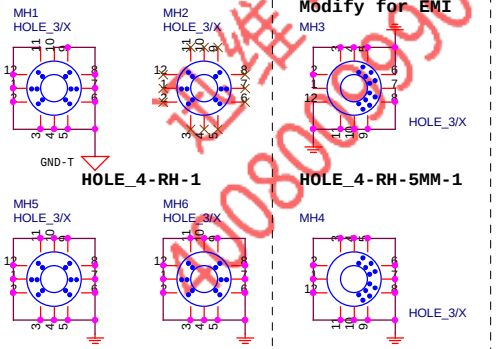


ATXX4 POWER CONNECTOR

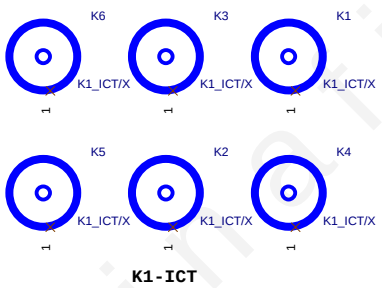


螺絲孔

MH1:GND-T
FOR EMI
TEST驗證

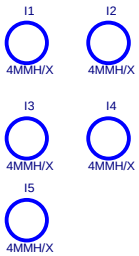


固定孔/光學點



K1-ICT

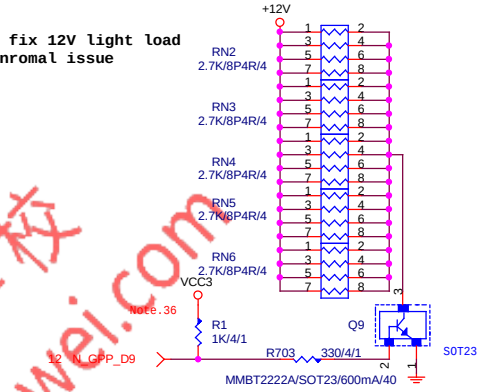
To prevent the 5VSB under loading when boot



4MMH

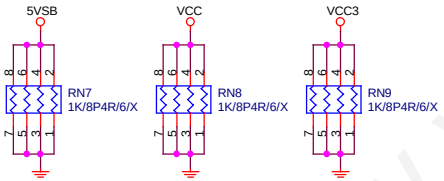
+12V DUMMY LOAD

To fix 12V light load abnromal issue



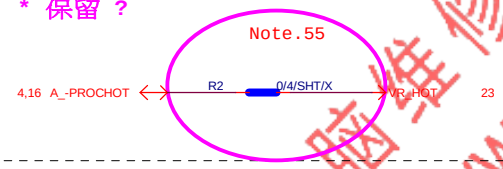
【技術通報R&D技術通報153】

DUMMY LOAD

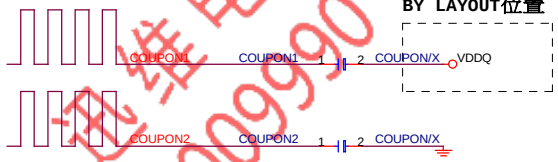


-PROHOT

* 保留 ?



COUPON



BY LAYOUT位置

Gigabyte Technology		
Title: ATX POWER CONNECTOR		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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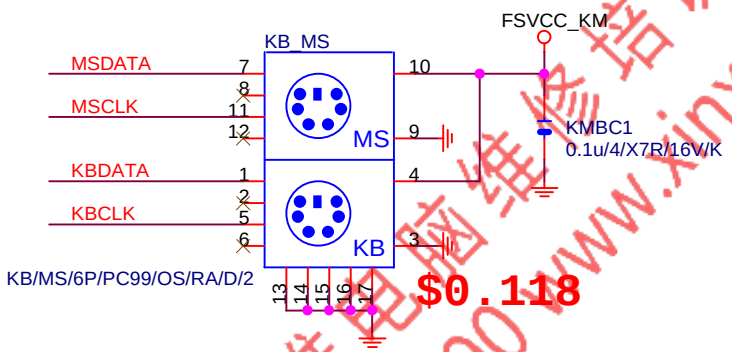
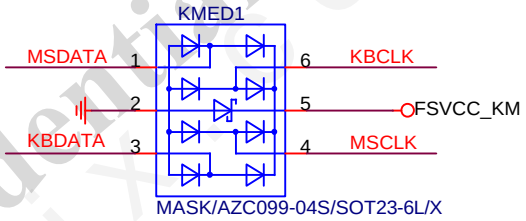
KB_MS_USB

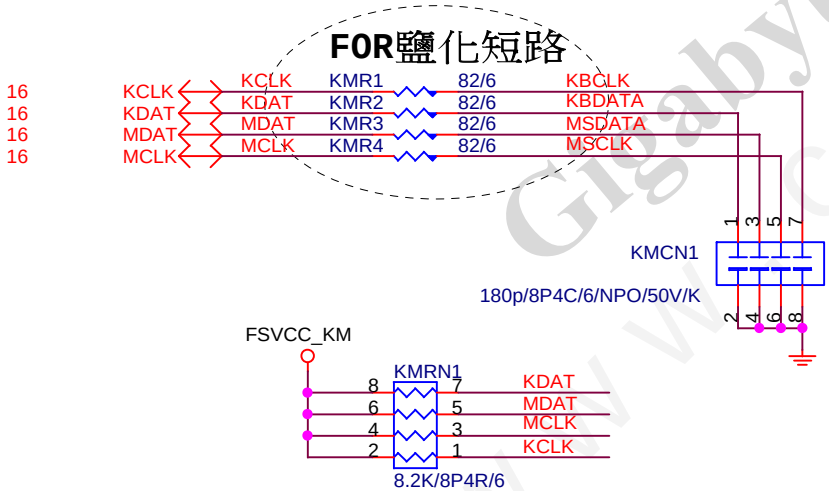
Rev: 0.51



ESD



KB_MS_USB DAMPING/PU



KB_MS_USB PWR

Gigabyte Technology			
Title: KB_MS_USB			
Size: A	Document Number: GA-B150M-EVO		Rev: 1.0
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DVI

Rev: 0.51

DVI:20/4/6/4/20
Impedance=85 +- 17.5%

NET 可變

DVI_TXC / DVI_TXC- — VBC1 / VBC2 — 0.1u/4/X7R/16V/K — DVITXC+ / DVITXC- — VR1 / VR2 — 680/4/1
DVI_TX0 / DVI_TX0- — VBC3 / VBC4 — 0.1u/4/X7R/16V/K — DVITX0+ / DVITX0- — VR3 / VR4 — 680/4/1
DVI_TX1 / DVI_TX1- — VBC5 / VBC7 — 0.1u/4/X7R/16V/K — DVITX1+ / DVITX1- — VR7 / VR8 — 680/4/1
DVI_TX2 / DVI_TX2- — VBC8 / VBC9 — 0.1u/4/X7R/16V/K — DVITX2+ / DVITX2- — VR9 / VR10 — 680/4/1

DVI_G

VQ1 2N7002/SOT23/25pF/5 SOT23
VCC — VR16 8.2K/4 — VQ1_2

DVI_SCL
VQ2 2N7002/SOT23/25pF/5 SOT23
VCC — VR17 1K/4/1 — VQ2_2 — N_DDPC_CTRLCLK

DVI_SDA
VQ3 2N7002/SOT23/25pF/5 SOT23
VCC — VR18 1K/4/1 — VQ3_2 — N_DDPC_CTRLDATA

DVI PU

防漏電
VCC
★Update 2015.05.27
VD1 BAT54A/SOT23/200mA SOT23

VR14 2.2K/4/1 — DVI_SDA
VR13 2.2K/4/1 — DVI_SCL

10 N_DDPC_CTRLCLK — VR5 2.2K/4/1 — VCC3
10 N_DDPC_CTRLDATA — VR6 2.2K/4/1 — VCC3
VBC6 0.1u/4/X7R/16V/K/X

DVI_HP
VQ4 2N7002/SOT23/25pF/5 SOT23
VCC3 — VR20 1M/4
VCC — VR19 8.2K/4 — VQ4_2 — N_DVI_HDP_F — N_DVI_HDP_F 10

DVI CONN

NET 可變
FSVCC_KM

DVI
M1
DVITX0- 17
DVITX0+ 18
DVITX1- 9
DVITX1+ 10
DVITX2- 1
DVITX2+ 2
3
11
19
12
13
4
5
20
21
DVI_SCL 6
DVI_SDA 7
14
15
22
DVITXC- 24
DVITXC+ 23
8
DVI_HP 16
VR15 20K/4/1
M5
M6
M7
M8
M2
COMMON

DVI-30P-4P-1

DVI-D/24P/SC/RA/D/SH
平躺式 DVI-D
11NR6-501024-31

ESD

NET 可變
FSVCC_KM
VBC10 0.1u/4/X7R/16V/K

VESD3
DVI_HP 1
2
DVI_SCL 3
6 DVI_SDA
5
4
AZC099-04S/SOT23-6L
NET 可變
FSVCC_KM

Close to connector

VESD2
DVITX1+ 10
DVITX1- 9
8 DVITX2-
7 DVITX2+
6
NC NC NC NC NC
D1+ D1- GND D2- D2+
1 2 3 4 5
DVITX1- DVITX1+ DVITX2+ DVITX2-
AZ1045-04F/MSOP10

Close to connector

* swap

VESD1
DVITXC- 10
DVITXC+ 9
8 DVITX0+
7 DVITX0-
6
NC NC NC NC NC
D1+ D1- GND D2- D2+
1 2 3 4 5
DVITXC+ DVITXC- DVITX0- DVITX0+
AZ1045-04F/MSOP10

Close to connector

Gigabyte Technology		
Title: DVI		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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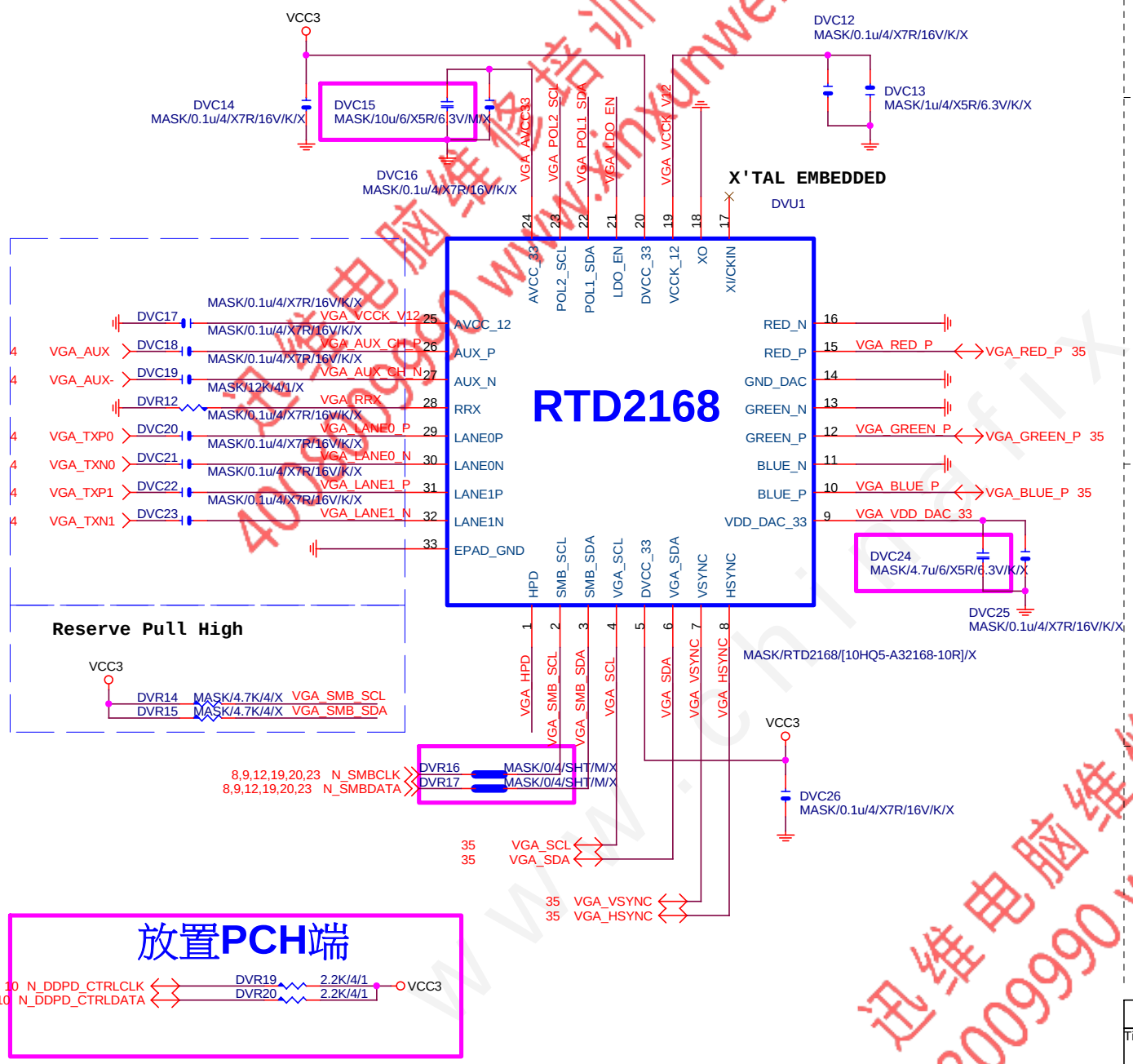
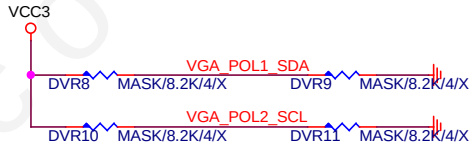
RTD2168 | R1.03



放置PCH端

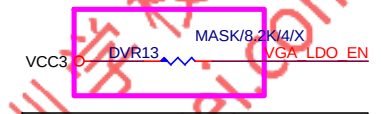
POWER

Power on latch



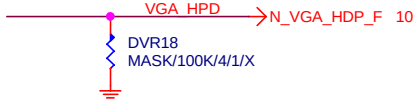
		POL1_SDA(PIN22)	
		0	1
POL2_SCL (PIN23)	0	X	EP MODE
	1	**ROM ONLY MODE**	EEPROM MODE

Embedded LDO



LDO_EN(PIN21)	
0	1
VCCK_V12 from External 1.2V	VCCK_V12 from Embedded LDO

DP HPD



Title	Gigabyte Technology DP-VGA RTD2168
Size: Custom	Document Number: GA-B150M-EVO
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VGA SIGNAL R1.03

VCC
DVD1
MASK/BAT54A/SOT23/200mA/X
SOT23
VGA_SDA_F
VGA_SCL_F
DVR2
MASK/2.2K/4/1/X
DVR3
MASK/2.2K/4/1/X
34 VGA_SDA
34 VGA_SCL
VGA_SDA
VGA_SCL

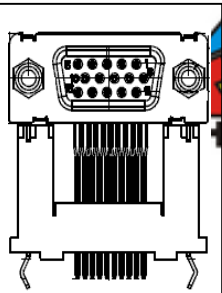
34 VGA_VSYNC
VGA_VSYNC
DVR1
MASK/33/4/X
G_VSYNC
DVC2
MASK/10p/4/NPO/50V/J/X
34 VGA_HSYNC
VGA_HSYNC
DVR4
MASK/33/4/X
G_HSYNC
DVC3
MASK/10p/4/NPO/50V/J/X

34 VGA_RED_P
34 VGA_GREEN_P
34 VGA_BLUE_P
VGA_RED_P
VGA_GREEN_P
VGA_BLUE_P
DVFB1
DVFB2
DVFB3
MASK/30/4/4A/S/X
MASK/30/4/4A/S/X
MASK/30/4/4A/S/X
G_VGA_R
G_VGA_G
G_VGA_B
DVR5
MASK/75/4/1/X
DVR7
MASK/75/4/1/X
DVR6
MASK/75/4/1/X
DVC4 DVC5 DVC6
MASK/10p/4/NPO/50V/J/X
MASK/10p/4/NPO/50V/J/X
MASK/10p/4/NPO/50V/J/X
DVC7 DVC9
DVC8
MASK/10p/4/NPO/50V/J/X
MASK/10p/4/NPO/50V/J/X
MASK/10p/4/NPO/50V/J/X

Close to Filter

FOR EMI

VGA CONN. 架高型VGA(BLACK)



FSVCC_KM
DVC1
MASK/0.1u/4/X7R/16V/K/X
VGA
G_VGA_R
G_VGA_G
G_VGA_B
VGA_SDA
G_HSYNC
G_VSYNC
VGA_SCL
MASK/VGA/BK/SC/RA/D/2/HR/X

VGA ESD

DVESD1
G_VSYNC
G_HSYNC
VGA_SCL
VCC
VGA_SDA
MASK/AZC099-04S/SOT23-6L/X

DVESD2
G_VGA_G
G_VGA_R
VCC3
G_VGA_B
MASK/AZC099-04S/SOT23-6L/X

Gigabyte Technology		
Title	NXP-PTN3356	
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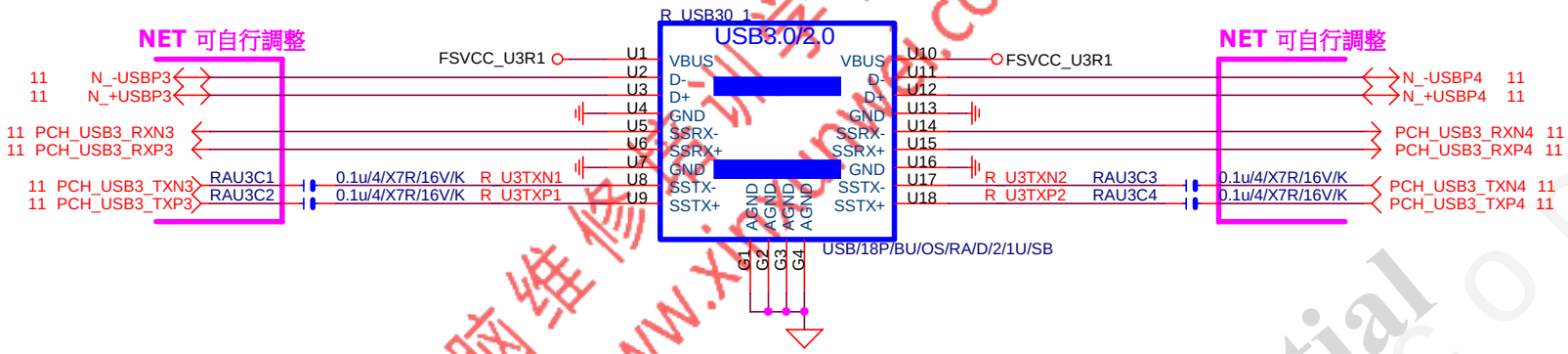
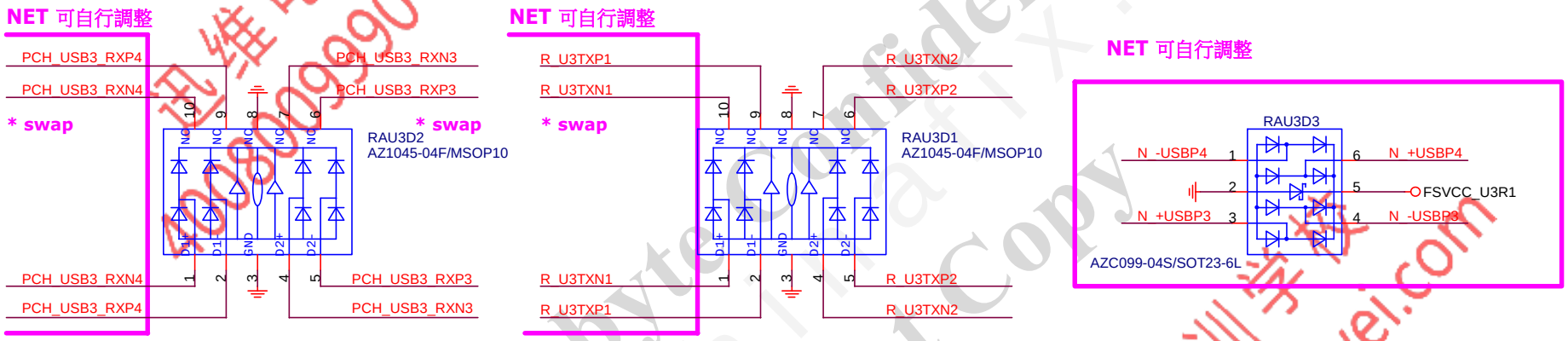
Rev: 0.53

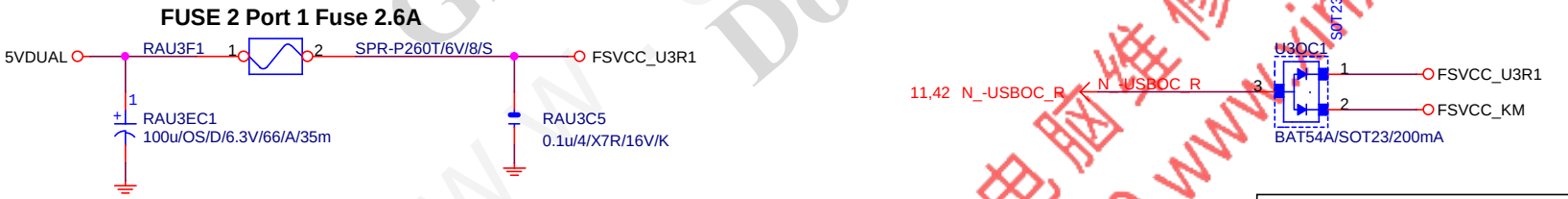
ESD 可自行SWAP PIN ,CONN端 NET 名稱 不可



ESD

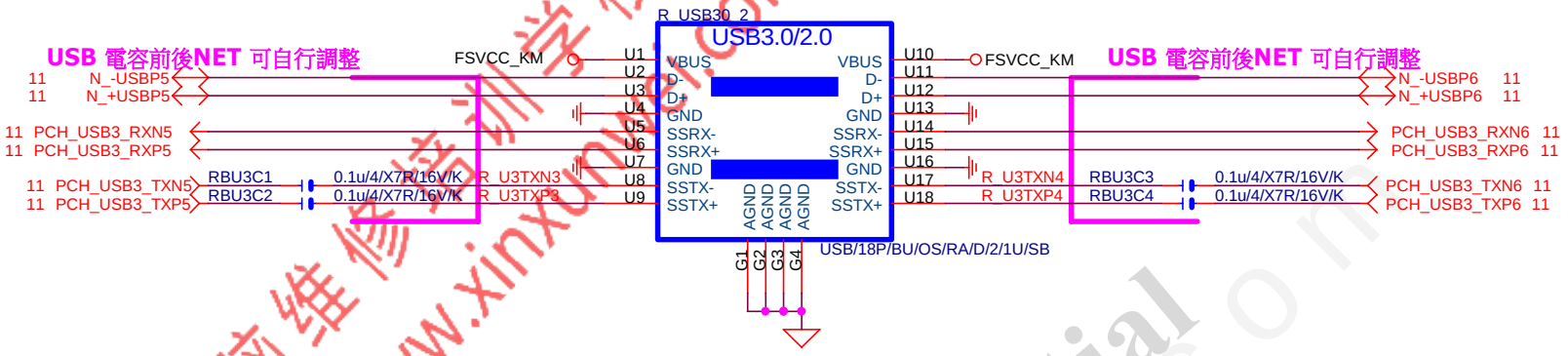


FUSE

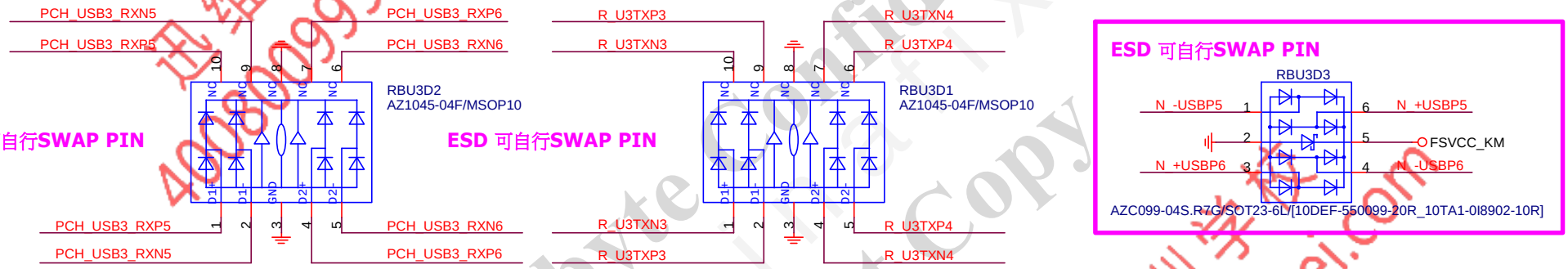


Gigabyte Technology		
Title: R_USB30,USB_OC		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 36 of 50	

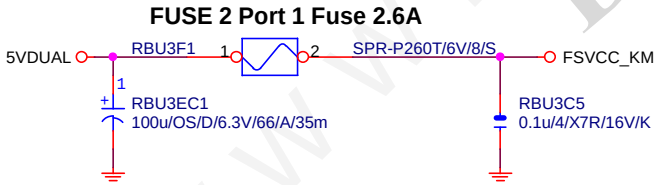
Rev: 0.53



ESD

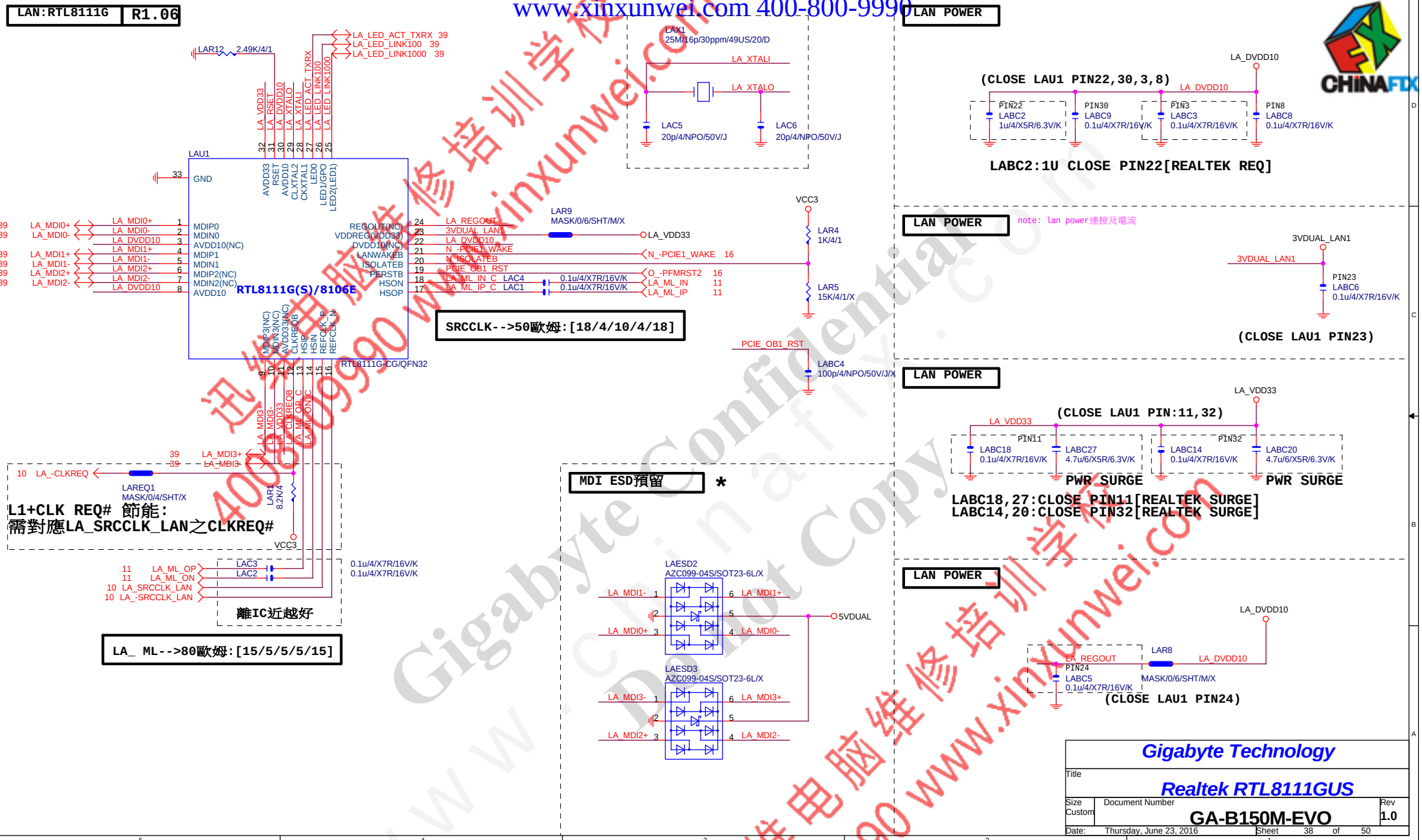


FUSE



Gigabyte Technology			
Title: R_USB30,USB_OC			
Size: Custom	Document Number: GA-B150M-EVO		Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 37 of 50		

LAN:RTL8111G R1.06



LAN POWER

LABC2:1U CLOSE PIN22[REALTEK REQ]

LAN POWER

note: lan power連接及電流

(CLOSE LAU1 PIN23)

LAN POWER

LABC18,27:CLOSE PIN11[REALTEK SURGE]
LABC14,20:CLOSE PIN32[REALTEK SURGE]

LAN POWER

(CLOSE LAU1 PIN24)

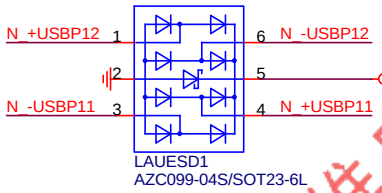
Gigabyte Technology		
Title: Realtek RTL8111GUS		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 38 of 50	

USB_LAN CONNECTOR R1.06

RMA ESD PROTECT

note:可變更USB NAME

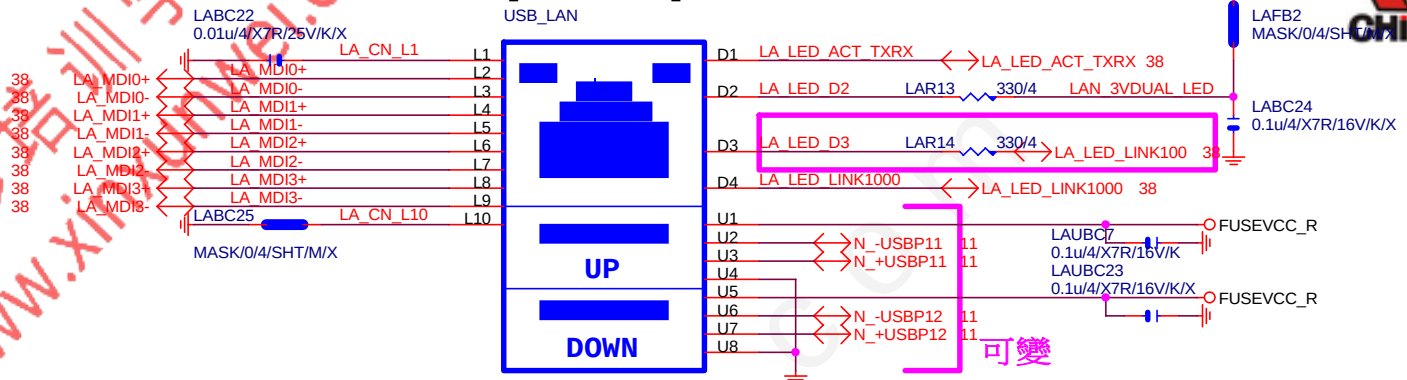
可變



USB_LAN CONNECTOR

[RTL8111G]

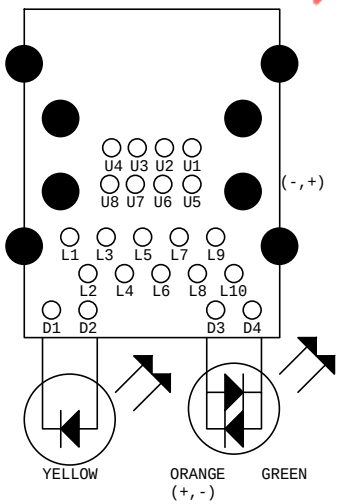
USB_LAN



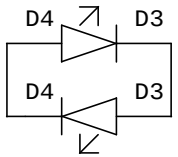
USB+LAN/1G/GO,Y/OS/RA/D/12C/ES/[11NR6-702009-Z1R_11NR6-702009-R2R]

LA_MDI-->100歐姆:[20/4/8/4/20]

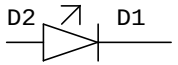
USB_LAN LAYOUT示意圖



Dual Color LED



Single Color LED



USB POWER

note:可變更FUSE

可變

Close to connector

USB_LAN 2-Port 2.0A

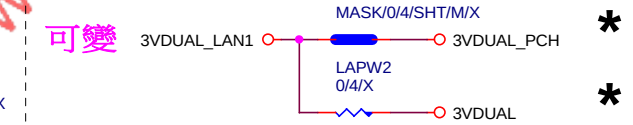
FUSE-0805

EMI SHORT PAD

PS:視EMI需求

LAN POWER

note: lan power連接及電流



Gigabyte Technology		
Title: LAN CONNECTOR-RTL8111G		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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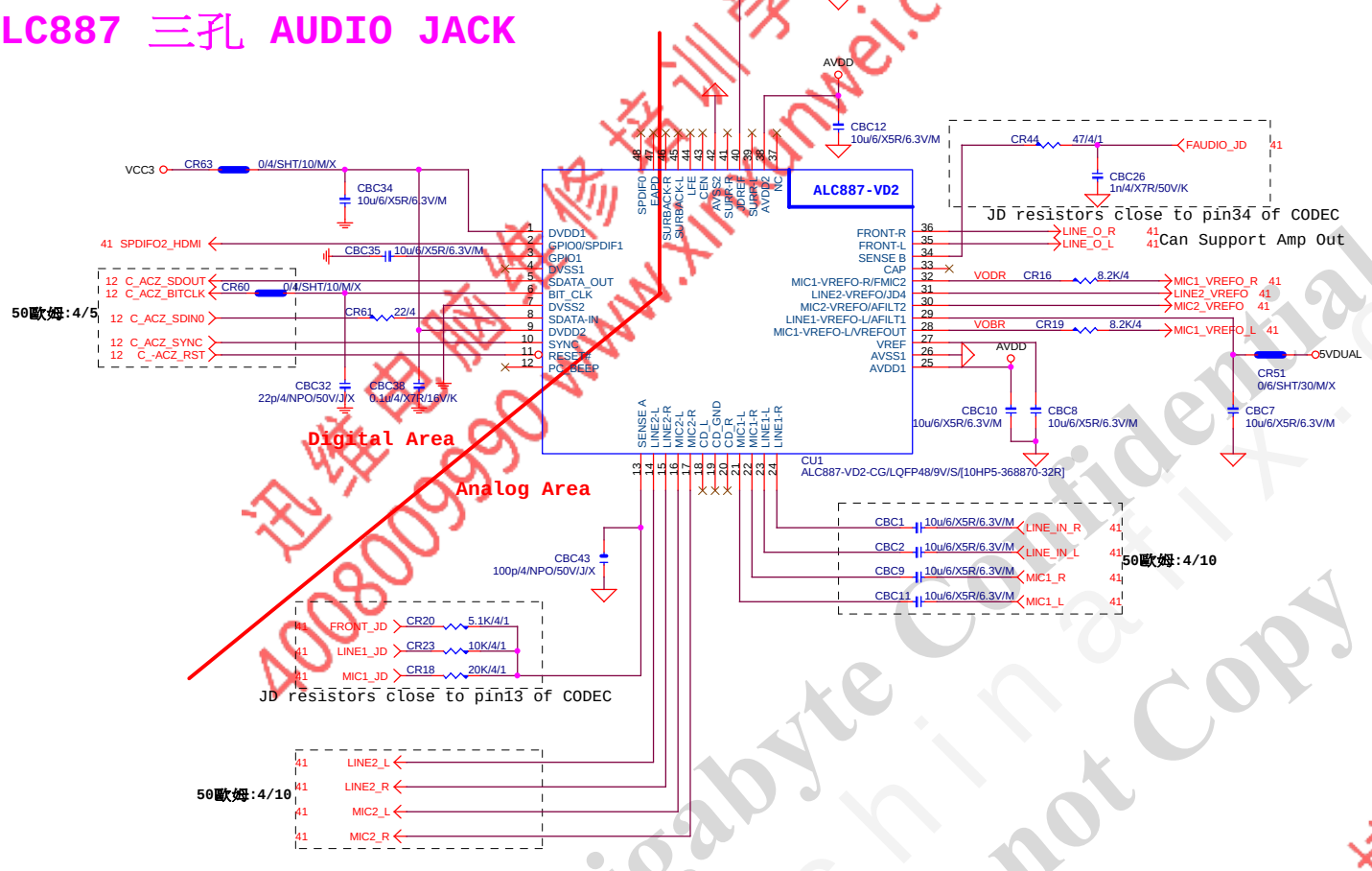
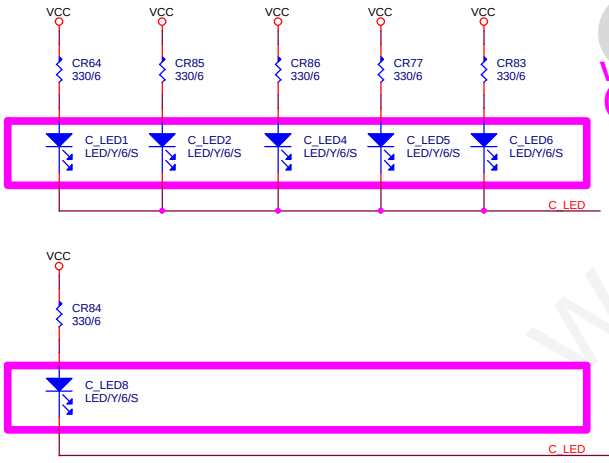
Rev 0.5

ALC887 三孔 AUDIO JACK

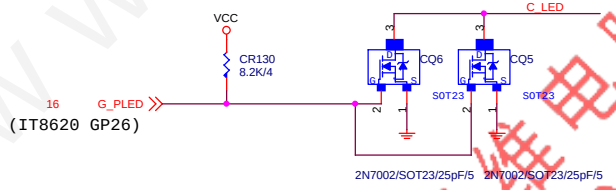


LAYOUT注意:螺絲孔下GND方式
1. MH1空間夠,下DGND
   空間不夠,改為Isolate
2. MH2一律改為Isolate

MH1	MH2
DGND	Isolate



VALUE可變,LED顏色請自行修改
(預設:低亮度黃色LED:LED/Y/6/S)



LAYOUT注意:要加
GND切割線
音效區域印刷

BOM OPTION : 1. Chemicon音效電容
2. 金屬外罩 Reserve (上件與否,依照各Model spec)
3. LED Reserve (上件與否和LED顏色,依照各Model spec)

Gigabyte Technology	
Title	HD AUDIO ALC887
Size: Custom	Document Number: GA-B150M-EVO
Rev	1.0
Date:	Thursday, June 23, 2016
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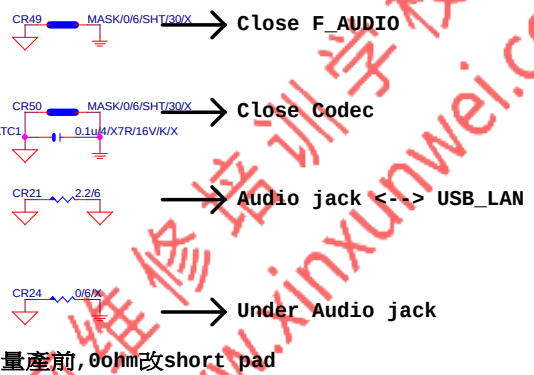
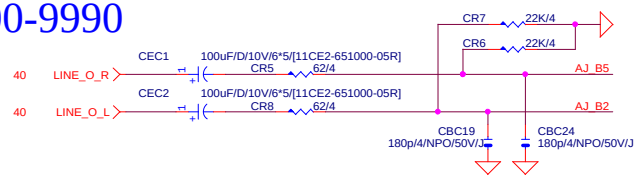
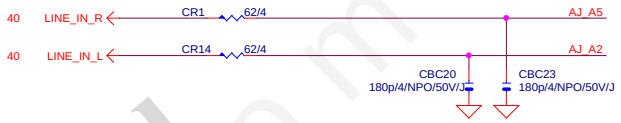
Rev 0.5



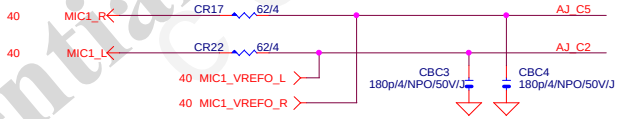
LINE-OUT



LINE-IN

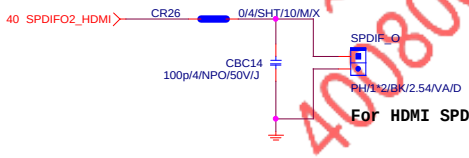


MIC-IN



SURROUND

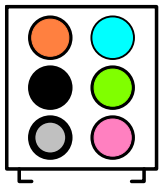
SPDIF_OUT

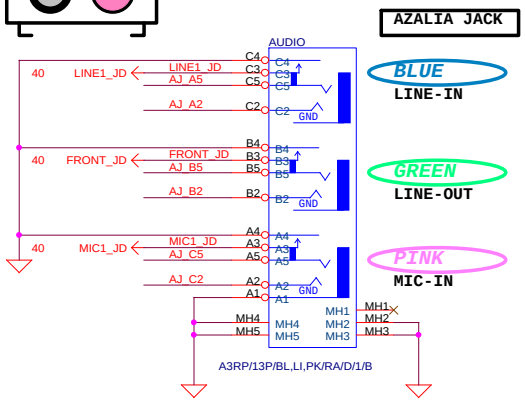


SPDIF_IN

CEN/LFE

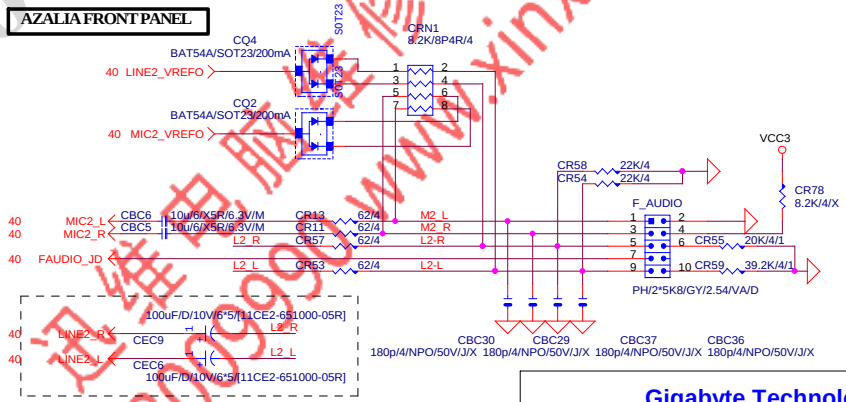
AZALIA JACK





SURR BACK

AZALIA FRONT PANEL



Gigabyte Technology

Title	AUDIO JACK	
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 41 of 50	

Rev: 0.51

Front USB3.0

F_USB30 REV=1

FSVCC_U3F1 → VBUS (1)

NET 自行調整

11 PCH_USB3_RXN1 → SSRX1- (2)
11 PCH_USB3_RXP1 → SSRX1+ (3)
11 PCH_USB3_TXN1 → FAU3C1 0.1u/4/X7R/16V/K → FU30_TXN1 → SSTX1- (5)
11 PCH_USB3_TXP1 → FAU3C2 0.1u/4/X7R/16V/K → FU30_TXP1 → SSTX1+ (6)
11 N_-USBP1 → D1- (8)
11 N_+USBP1 → D1+ (9)
GND (7, 4)

VBUS (19) ← FSVCC_U3F1
FU30_TXN2 ← FAU3C3 0.1u/4/X7R/16V/K ← PCH_USB3_TXN2 11
FU30_TXP2 ← FAU3C4 0.1u/4/X7R/16V/K ← PCH_USB3_TXP2 11
SSRX2- (18) → PCH_USB3_RXN2 11
SSRX2+ (17) → PCH_USB3_RXP2 11
D2- (12) → N_-USBP2 11
D2+ (11) → N_+USBP2 11
GND (16, 13)

BH/2*10K20/BK/ON/2.0/VA/USB3.0/PRT

NET 可自行調整

PCH_USB3_RXP1 / PCH_USB3_RXN1 → FAU3D1 AZ1045-04F/MSOP10 → PCH_USB3_RXP2 / PCH_USB3_RXN2

FAU3D3 AZC099-04S/SOT23-6L
N_+USBP2 ↔ N_-USBP2
N_-USBP1 ↔ N_+USBP1
3VDUAL

CLOSE F_USB30

F_USB30 PWR

5VDUAL → FAU3F1 → SPR-P260T/6V/8/S → FSVCC_U3F1
FAU3EC1 100u/OS/D/6.3V/66/A/35m
FAU3C5 0.1u/4/X7R/16V/K

NET 可自行調整

11,43 N_-USBOC_F → U3OC3 BAT54A/SOT23/200mA → FSVCC_U3F1

FU30_TXP1 / FU30_TXN1 → FAU3D2 AZ1045-04F/MSOP10 → FU30_TXN2 / FU30_TXP2

CLOSE F_USB30

-USBOC_F

POWER 可自行調整

FSVCC_U3F1 → UAR1 8.2K/4 → N_-USBOC_F → N_-USBOC_F 11,43
UAR2 15K/4/1

-USBOC_R

POWER 可自行調整

5VDUAL → UBR1 8.2K/4 → N_-USBOC_R → N_-USBOC_R 11,36
UBR2 15K/4/1

* 接 PCH N_GPP_B21
PCH PU 3vdual
12 N_GPP_B20

UAD5 BAT54A/SOT23/200mA
N_-USBOC_F ↔ N_-USBOC_F 11,43
N_-USBOC_R ↔ N_-USBOC_R 11,36

Gigabyte Technology	
Title	R_USB30,F_USB30, USB_OC
Size: Custom	Document Number: GA-B150M-EVO
Rev: 1.0	
Date: Thursday, June 23, 2016	Sheet 42 of 50

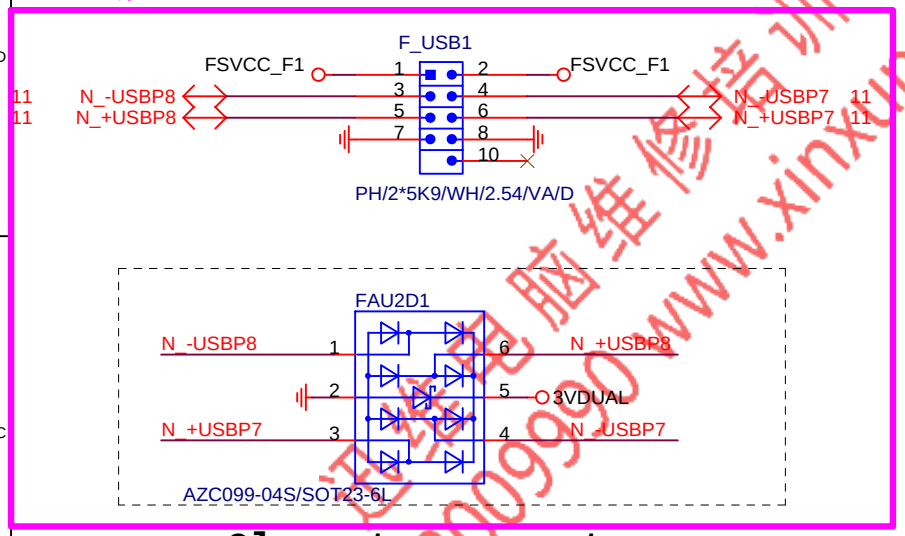
FUSE 4 SMD1 Fuse 2A

FRONT USB1

FRONT USB2

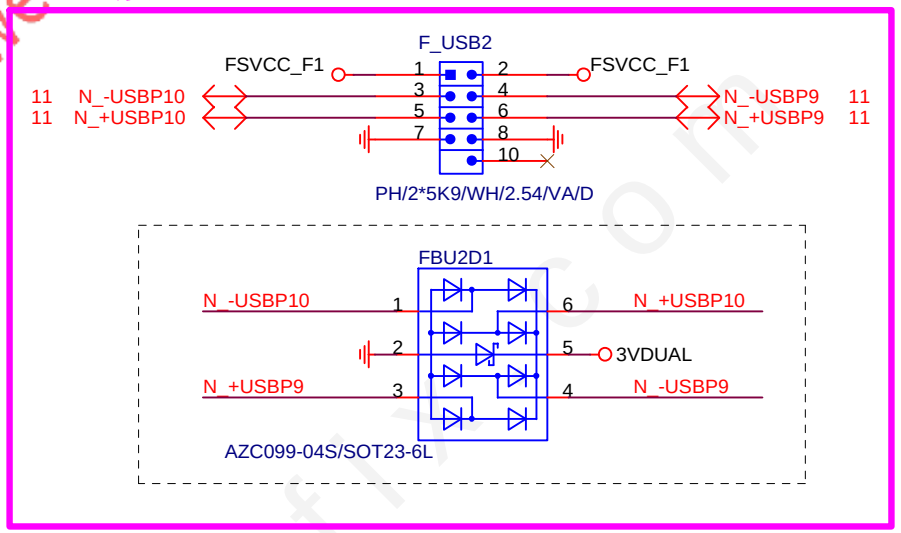
NET 可變

FUSB2X5-HS

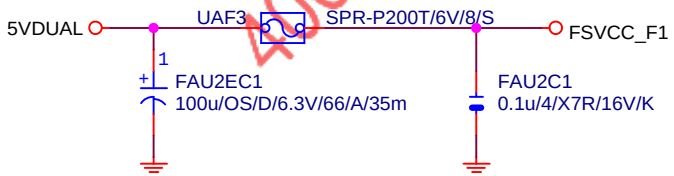


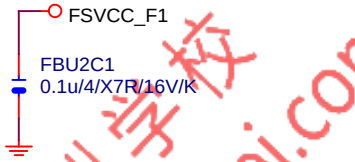
NET 可變

FUSB2X5-HS

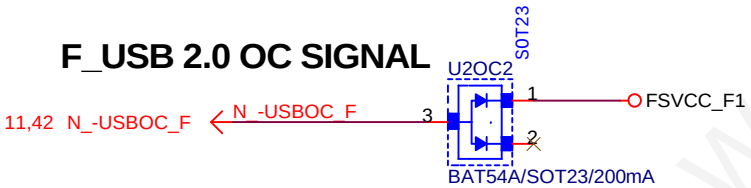


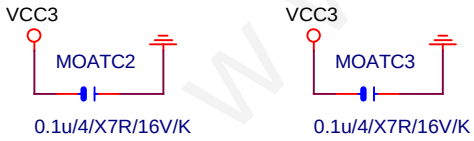
Close to connector





F_USB 2.0 OC SIGNAL



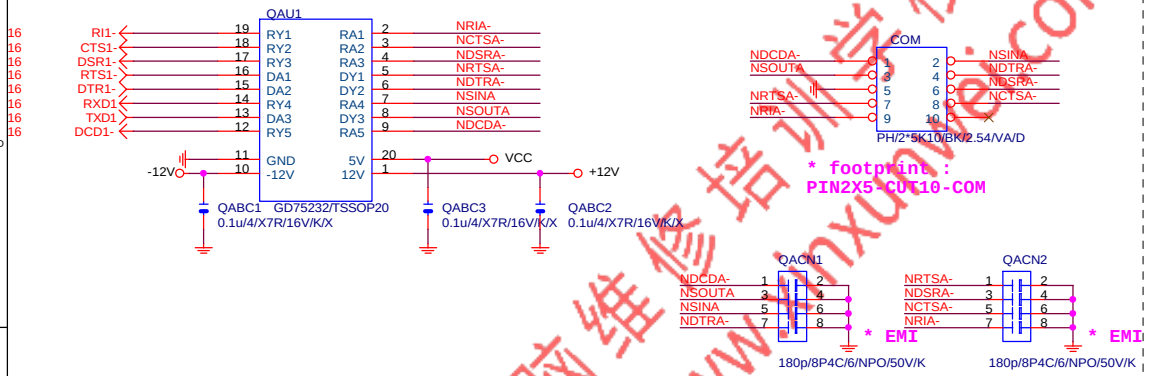


Gigabyte Technology

Title: USB2.0			
Size: A	Document Number: GA-B150M-EVO		Rev: 1.0
Date: Thursday, June 23, 2016		Sheet 43 of 50	

COM PORT

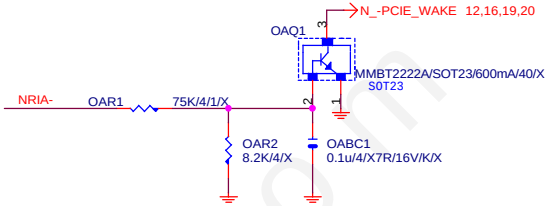
Rev: 0.51



* footprint : PIN2X5-CUT10-COM

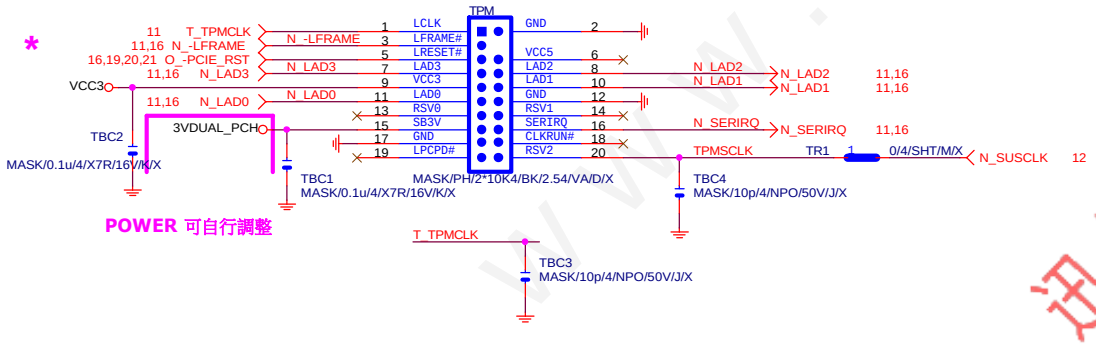
COM BE

* 接 N_-PCIE_WAKE



LPT PORT

TPM CONNECT

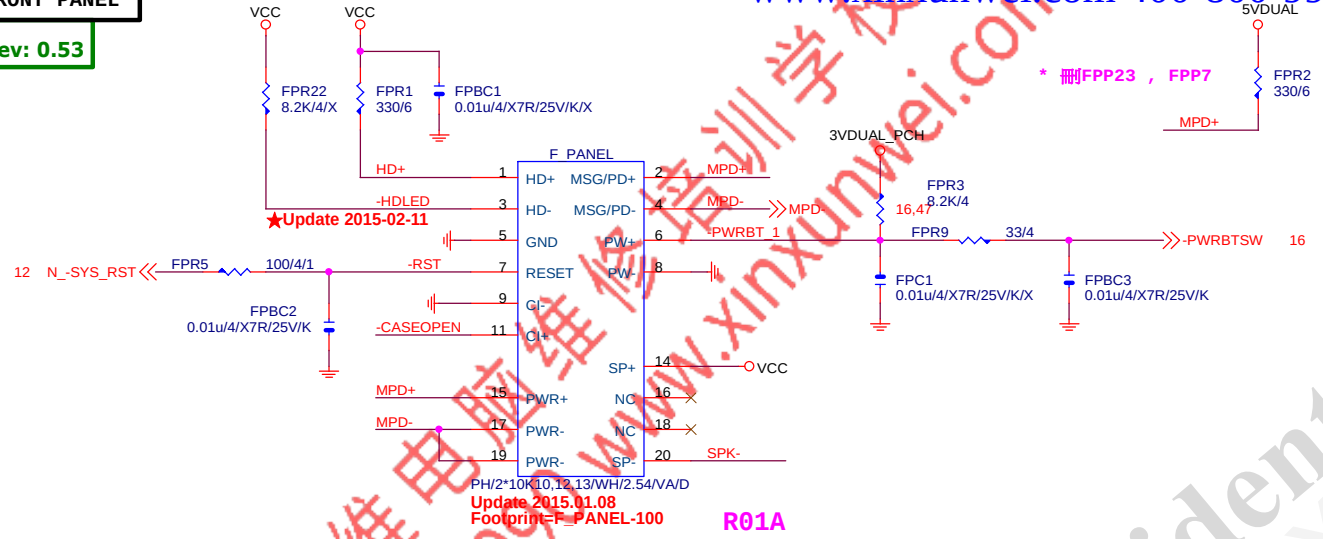


Thunderbolt (N/A)

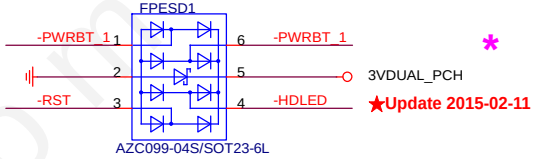
Gigabyte Technology		
Title: FP,F_USB,USB PWR,BZ		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 44 of 50	

FRONT PANEL

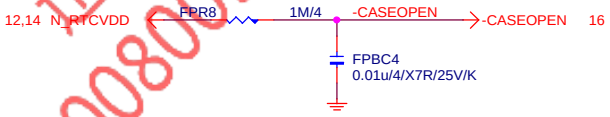
Rev: 0.53



ESD



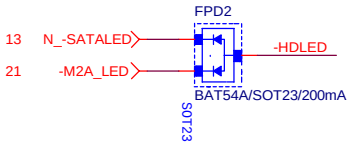
CASE OPEN



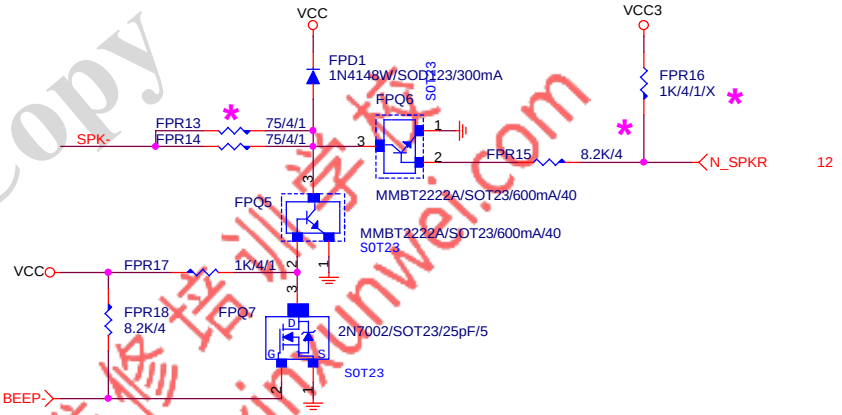
SATA LED

SATALED# signal open-collector,pull-up (8.2 kΩ to 10 kΩ) to Vcc3_3

★Update 2015-02-12



SPKR



For SPKR voltage issue. FPQ6=>2222, FPQ7=>7002

Gigabyte Technology		
Title: FRONT PANEL		
Size: Custom	Document Number: GA-B150M-EVO	Rev: 1.0
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OVER VOLTAGE

NCT3933	0X2A	0X20	0X22
VREF1	DDRVTT	VREF_DDRA_DQ	PCH Core
VREF2	VREF_DDRA_CA	N/A	VCC1_5_PCH
VREF3	VREF_DDRA_CA	VREF_DDRB_DQ	SMREF

Gigabyte Technology

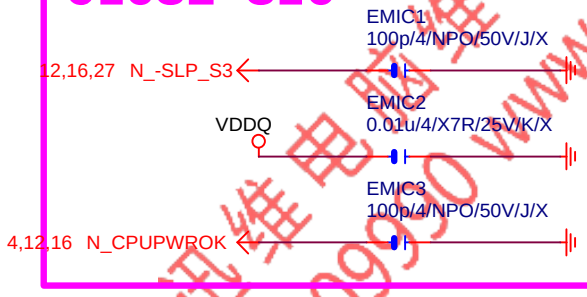
Title: CPU CORE VR-2

Size: Custom | Document Number: GA-B150M-EVO | Rev: 1.0

Date: Thursday, June 23, 2016 | Sheet 46 of 50

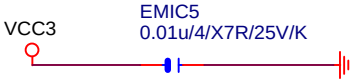
EMI/ESD R0.1

CLOSE SIO



CLOSE PCH

close to PCH (NR17)



R_USB30_2 & DVI 之間

close to FRONT PANEL

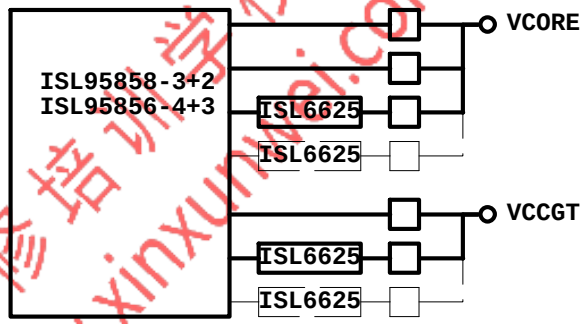
GIGABYTE™

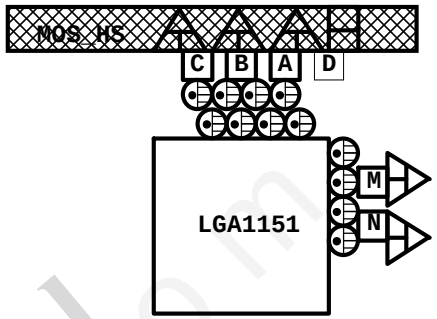
Title: EMI/ESD		
Size: A	Document Number: GA-B150M-EVO	Rev: 1.0
Date: Thursday, June 23, 2016	Sheet 47 of 50	

POWER BLOCK MAP

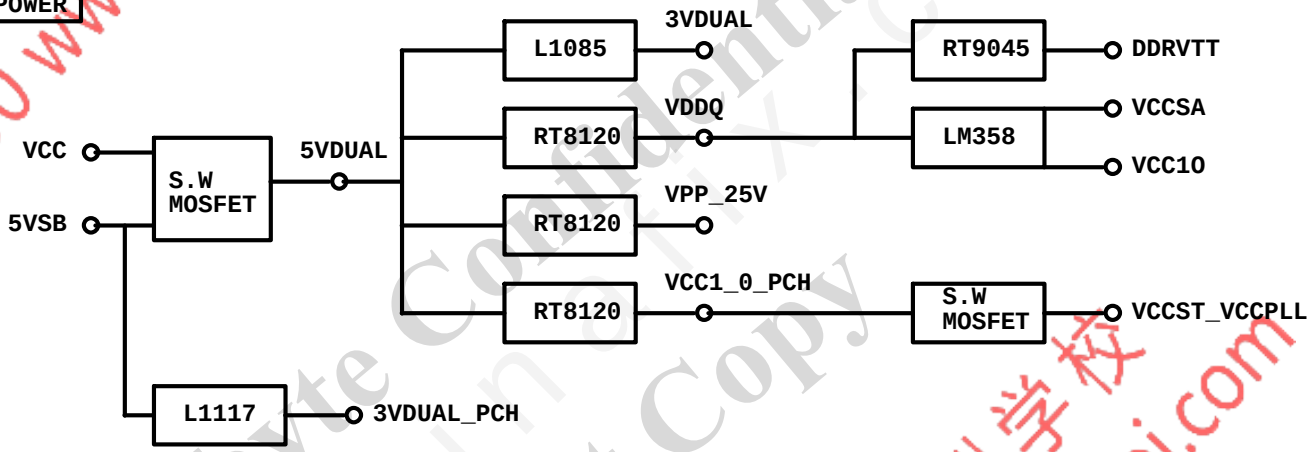
- CPU: VCORE, VCCGT, VCCSA, VCCIO, VDDQ, VCCST_VCCPLL, VCCSFUSEPRG
- DDR4: VDDQ, DDRVTT, VPP_25V, VDDSPD(VCC3)
- PCH: VCC1_0_PCH, VCC1_0_PCH_DSW, VCC10_VCCF24_1P0, VCC10_VCCAMPHYPLL, VCC10_VCCAPLL, VCC3_PCH, 3VDUAL_PCH, VCC3, N_RTCVDD
- IT8628: IT_VCCH, IT_AVCC, 2_5LEVEL
- HM: +12V, VCC, VCC3, VCORE, VCCGT(IMON_VCCGT), VDDQ, VCCSA(IMON_VCORE)

VCORE/VCCGT

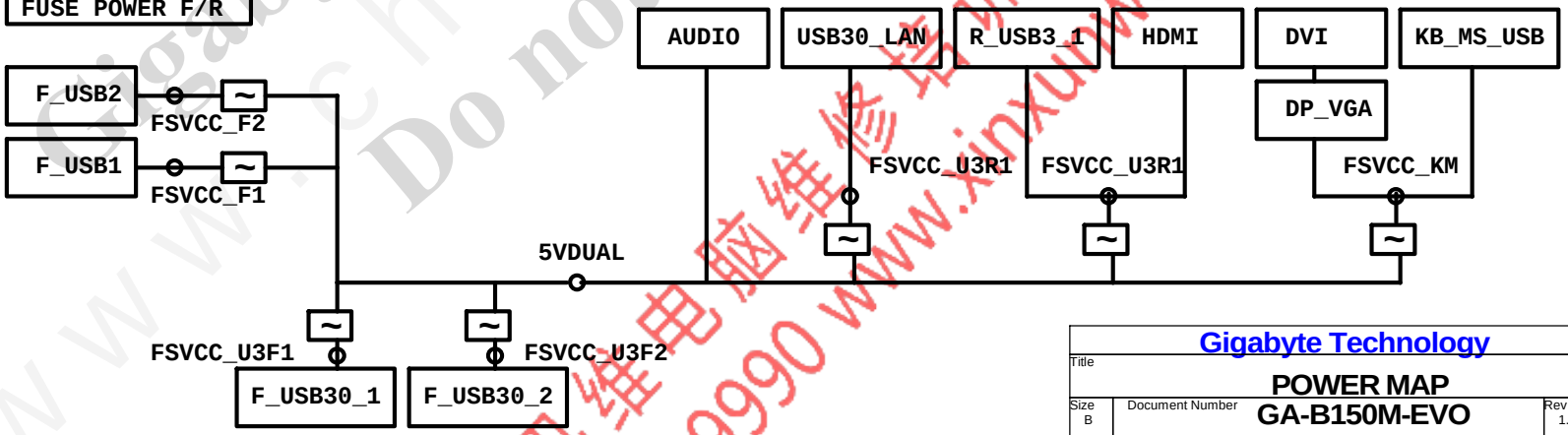




POWER



FUSE POWER F/R



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固態電容料號.請自行修改

日系黑色固態	Capture Value
11C02-C85600-01R	560u/FP/D/6.3V/68/C/8m
11CO5-C82700-01R	270u/FP/D/16V/88/C/12m
11CO5-C61000-01R	100u/OS/D/16V/66/C/30m
11CO2-C51000-01R	100u/FP/D/6.3V/65/C/13m

日系一般固態	Capture Value
11CO2-685600-01R	560u/FP/D/6.3V/68/8m
11CO5-882700-01R	270u/FP/D/16V/88/12m
11CO5-661000-03R	100u/OS/D/16V/66/30m
11CO2-651000-02R	100u/OS/D/6.3V/66/30m

台系固態	Capture Value
11CO2-661000-09R	100u/OS/D/6.3V/66/A/35m
11CO5-691000-09R	100u/OS/D/16V/69/A/35m
11CO5-8C2700-09R	270u/FP/D/16V/8C/A/10m
11CO2-695600-09R	560u/FP/D/6.3V/69/A/11m

IRON CHOKE

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-M4500C-01R	0.5uH/40A/IMD109/M/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-M2500C-01R	0.5uH/20A/IMD0809/M/D	8*8	CHOKE1U-R50M-IF

Ferrite

	料號	Capture Value	SIZE	Footprint
DIP	11LC5-F3500C-11R	0.5uH/32A/INCG109/FSI/D	10*10	CHOKE05U-40A-1PQ-3
DIP	11LC5-F2500C-11R	0.5uH/25A/INC0809/F/D	8*8	CHOKE1U-R50M-IF
SMD	未建(SIUC1007-R30M-JJ1W)		10*7	CHOKE11X8MM-SMD

BEAD

	料號	Capture Value	SIZE	Footprint
DIP	10LFB-15470A-01R	47/4030/15A/S	4*3	BEADC8B-BPH_SMD

PWM料號

		料號	Capture Value	Footprint
PWM	ISL95856	10TA1-695856-01R		IC52QFN-6x6-G
PWM	ISL95858	10TA1-695858-01R		IC52QFN-6x6-G
PWM	IR35201	10TA1-635201-00R		IC56QFN-9VRS4339
PWM	IR3570	10TA1-603570-00R		IC40MLFP-ISL95835

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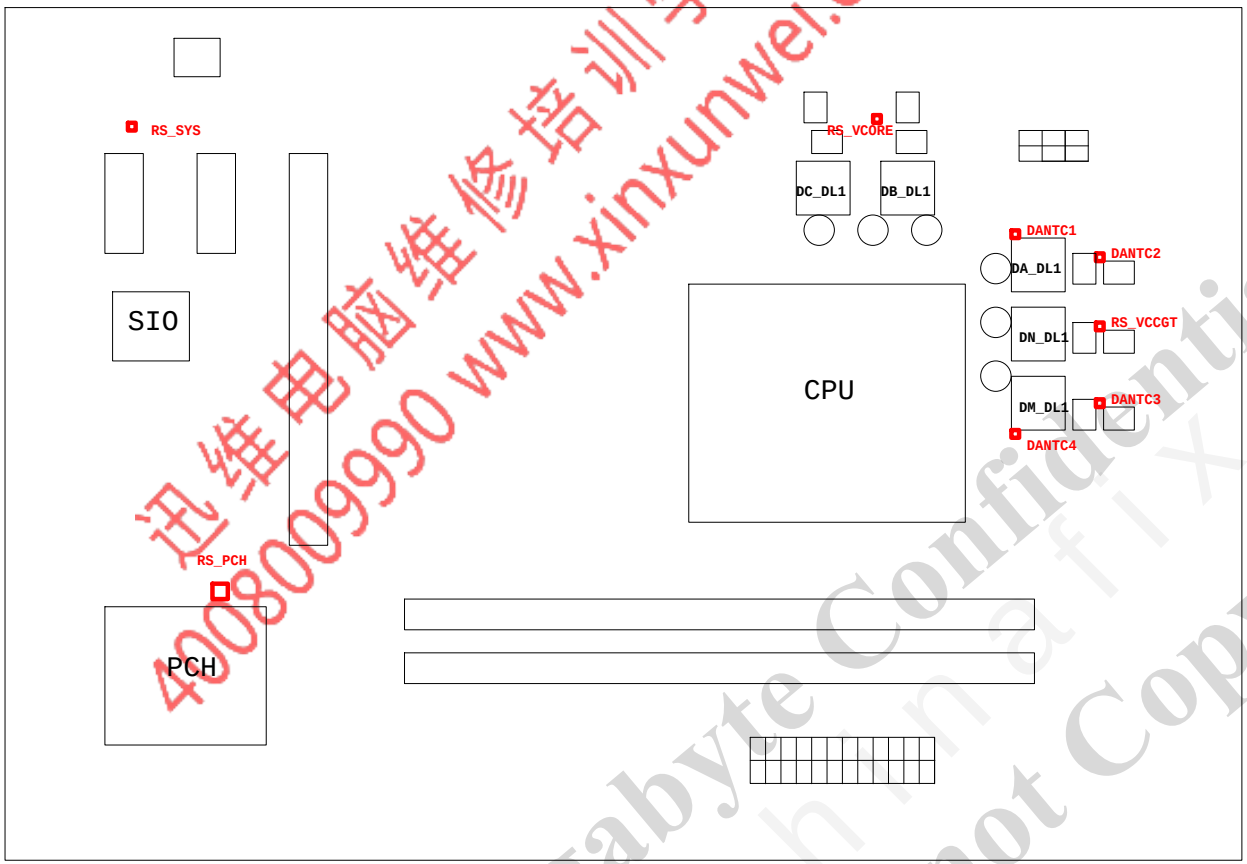

熱敏電阻	擺放靠近位置	走線方式
DANTC4	DM_DL1	Differential
DANTC1	DA_DL1	Differential
DANTC3	DM_DQ1	Differential
DANTC2	DA_DQ1	Differential
RS_VCORE	DC_DQ1	N/A
RS_VCCGT	DM_DQ1	N/A
RS_PCH	PCH	N/A
RS_SYS	CU1	N/A

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